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DESFIL
Development Strategies for Fragile Lands

FINAL EVALUATION

OF THE WWF

DEBT-FOR-NATURE

PROJECT

Providing

Institutional Support for the

Department of Eaux et Forêts

Prepared for:
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Any misstatements of fact or other errors of ommission or commission in our report are the Team's responsibiltity.

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Acronym list

AF	Agent Forestier: Forest Agent (DEF)
ANGAP	Association Nationale pour la Gestion des Aires Protégées: National Association for the Managaement of Protected Areas
API	Assessment of Program Impact
APN	Agent pour la Protection de la Nature: Agent for the Protection of Nature
CAG	Conservation Aaction Grant: Suvention aux Actions de Conservation (SAC)
CFPF	Centre de Formation Professionnelle Forestière: Professional Forestry Training Center
CI	Conservation International, a US PVO
CIREF	Circonscription des Eaux et Forêts: Regional level of the Forest Department
COP	Chief of Party
CPSP	Country Program Strategy Plan (USAID)
CTP	Conseiller Technique Principal: Principal Technical Advisor
Debt/Nature	Debt for Nature Project (WWF)
DEF	Departement des Eaux et Forêts: Department of Water and Forests
DESFIL	Development Strategies for Fragile Lands (USAID Project)
DIVB	Departement d'Information et de Valorisation de la Bio-diversité (ANGAP): Evaluation Department (ANGAP)
EAP	Environmental Aaction Plan: Plan d'Action Environnementale (PAE)
fmg	francs Malgash: Malagasy francs
GMU	Grants Management Unit
GRM	Government of the Republic of Madagascar
ICDP	Integrated Conservation and Development Project: Projet de Conservation et Développement Integré (PCDI)
IMF	International Monetary Fund
KEPEM	Knowledge and Effective Policies for Environmental Management (USAID Project)
KASTI	Village forestry committee
LTTA	Long-term Technical Assistance
M&E	Monitoring and Evaluation: Suivi et Evaluation
NGO	Non-Governmental Organization: Organisation Non-Gouvernementale (ONG)
ONE	Office National de l'Environnement: National Environmental Office
PA	Protected Areas: Aires Protégées (AP)
PADG	Protected Area Development Grant: Subvention au Développement des Aires Protégées (SDAP)
PASF	Project d'Appui au Service Forestier: Forestry Service Support Project

PDFI	Project de Développement et Foresterie Integré (GTZ Project): Integrated Development and Forestry Project
PPDI	Petit Projet de Développement Integré: Small Integrated Development Project
PRA	Participatory Rural Appraisal: Enquête Rurale Participative
PVO	Private Voluntary Organization
RRA	Rapid Rural Reconnaissance: Enquête Rurale Accélérée
REDSO/WCA	Regional Economic Devlopment Support Office/West and Central Africa (USAID)
SAVEM	Sustainable Approaches for Viable Environmental Management (USAID Project)
SO	Strategic Objective (USAID)
SPEF	Service Provincale des Eaux et Forêts: Provincial Service of the Water and Forest Department
SOW	Scope of Work: Termes de References
STTA	Short-term Technical Assistance
TA	Technical Assistance: Assistance Technique
Tana	Antananarivo
TR&D	Tropical Research and Development
USAID	United States Agency for International Development
WWF	World Wildlife Fund

FINAL EVALUATION OF THE WWF DEBT-FOR-NATURE PROJECT

EXECUTIVE SUMMARY

A. PURPOSE OF THE EVALUATION

The evaluation was undertaken to assess impacts of the project and changes to improve field effectiveness, and to recommend future objectives and strategies, and procedures for the project's complete integration into the Direction of Water and Forests (DEF).

B. RELATIONSHIP OF THE PROJECT TO USAID STRATEGIC OBJECTIVES

The project supports USAID Strategic Objective #3 to reduce natural resource depletion in target areas. The project has two purposes, reduction of Madagascar's external debt and institutional strengthening of DEF which has responsibility for safeguarding Madagascar's forests.

C. PROJECT STRUCTURE

The Debt/Nature project started in 1989. Initially, implementation was tightly focused on providing a new type of DEF presence at the field level to help with forest surveillance and to serve as a conservation and development link between DEF and local communities surrounding the forests. DEF has existed since colonial times and has historically carried out a regulatory and enforcement function. Due to budget constraints DEF has had progressively less internal resources to protect forest areas since independence. Improving DEF's relations with rural communities and enlisting their cooperation and support in forest protection and conservation is an important element in enhancing DEF's capacity.

To do this 375 new employees, called Agents for the Protection of Nature (APNs) were employed by DEF on one year renewable contracts using project funds. The APNs work with local DEF forestry agents (AFs) to help maintain the forests. They also spend a part of their time each month educating villagers on the need for forestry conservation and enlisting their support in this process. The APNs also help villagers carry out conservation related rural development.

To implement the project USAID Madagascar made a $2.5 million grant to the World Wildlife Fund, which used the grant to purchase and repatriate approximately $5 million worth of Malagasy foreign debt. These funds and the interest earned on them pay the salaries of the APNs and other project expenses.

In recent years the project has provided limited amounts of more general budget support to DEF at regional and central levels.

D. EVALUATION FINDINGS

The project has succeeded in giving DEF much needed human resources support and has provided a mechanism whereby villagers in areas around forests and other protected areas can become involved more directly and effectively in natural resource conservation and their own development. It has also succeeded in part in changing DEF's image and orientation concerning how it can most effectively carry out its conservation responsibilities.

The project is understood by the conservation community in Madagascar but there is widespread disagreement over the project's underlying assumption that the roles of APNs and AFs can be harmonized and combined within DEF. There are also differing views both within DEF and within the broader conservation community on the roles of APNs. These differences adversely impact on their effectiveness as conservation and development promoters within villages.

The project has had a small but positive impact on Madagascar's external debt burden and financial situation. It is more difficult to assess the project's impact on forest resource conservation and institutional strengthening of DEF because an adequate impact monitoring system has not been created. There is no way to establish project impact on vegetation change directly. Data collected are on activities carried out, not changes in human behavior or vegetation.

Nonetheless there is some evidence available to suggest that the project has contributed to a reduction in the amount of forest clearing for agricultural use and bush fires. It has also lead to some reforestation and land and soil conservation efforts by villagers. The best results appear to be occurring in areas where APN village related activities are associated with other donor supported natural resource management efforts.

The project staff are well qualified and highly motivated and the project is for the most part well administered, particularly considering its decentralized and highly dispersed character. The project is well integrated into DEF technically and administratively, but it does not appear DEF would or could assume funding responsibility for it at any time in the foreseeable future.

E. CONCLUSIONS AND RECOMMENDATIONS

The team believes further integration of the project into DEF should be deferred until the government's new laws and policies on decentralization and forestry, and their application, are discernable. This would allow a determination at that time on whether an alternate institutional location of the project and the APNs might be more effective in achieving the basic objective of improving natural resource management.

In the meantime the team recommends that several other actions be taken to enhance results being achieved:

- The strategy of the project should be re-thought and consideration given to greater concentration of APN activities and financial resources in high priority forest areas, preferably in tandem with other development activities, to increase impact.

- Project resources should be re-focused on the work of APNs with villagers. The goal of transferring responsibility for the management of natural resources to villagers should become a more direct and transparent objective of DEF-WWF Debt-for-Nature collaboration. Activities which either impinge on the time available for this work, or negatively impact on the APNs ability to perform it should be reduced or eliminated.

- APN training should emphasize more strongly that promoting community based conservation and development is the primary function of APNs. DEF staff should be trained into this new policy orientation, rather than training APNs to integrate into a traditional forestry agent role.

- The project should limit its general budget support to DEF pending clarification of DEF's role under the new forestry policy. In the meantime institutional support provided to DEF should be for the explicit purpose of making community based conservation and development a more integral part of the DEF mission and function.

- The role of APNs and/or local APN activity action plans should be factored into DEF and ICDP classified forest management plans.

- A working agreement among DEF, ANGAP, ICDP operators and other partners should be established specifying the roles and functions of the APNs and other field level agents and the appropriate relationship between DEF staff and the personnel of other partners.

- Creation of an independent monitoring and evaluation system within the Debt/Nature project and/or DEF, compatible with and linked to other USAID supported environmental activity M&E systems, should be a condition of project extension or expansion.

- Greater attention should be paid to gender in APN recruitment, training and village level activities.

SECTION I. BACKGROUND

A. PURPOSE OF THE EVALUATION

The purpose of the evaluation, as stated in the Statement of Work (SOW), is to:

1. To assess the progress and impacts of the Debt for Nature project, especially since the 1992 evaluation.

2. To suggest specific changes to improve the project's effectiveness in the field for the remaining project period.

3. To recommend future objectives and strategies for the project and procedures for complete integration of the project into Direction des Eaux et Forêts (DEF).

B. RELATIONSHIP OF THE PROJECT TO USAID MISSION STRATEGIC OBJECTIVES

The Debt for Nature project supports Strategic Objective 3 which is to reduce natural resources depletion in target areas. The stated purposes of the project are two-fold: To reduce Madagascar's external debt service burden; and to increase the financial and technical resources in Madagascar for the protection of natural resources. This latter objective has been refined into institutional support for the Direction of Water and Forests (DEF), a sub-unit of the Ministry of State for Agriculture and Rural Development.

C. ROLE OF THE DEF

In order to understand the logic and structure of the project, as well as some of the team's findings and recommendations, it is important to have an understanding of both the present and historical role of the forest service within Madagascar.

The forest service was established as a control and enforcement organization under the colonial regime to protect and manage the classified forests. Forests were classified to protect watersheds, fragile lands and biodiversity, and to provide fuel for steam-powered rail and boat transportation systems. The forest service planted some plantations and guarded the natural forests claimed by the colonial government to prevent use by the population. In some cases, local populations were expelled from forest areas when they were claimed by the colonial government. Not all forests were excluded from use, but users had to procure a permit from the forest service. In many cases logging permits went to the rich and powerful, rather than to members of the local communities. Foresters were vested with the authority to assess fines or arrest people who used the forest without the proper permits. Frequently villagers were fined or otherwise sanctioned for use of protected forests, causing

an antagonistic relationship between the service and local communities, and outright fear on the part of villagers.

Since Independence, budget constraints have increasingly prevented the forest service from establishing plantations and have undermined its effectiveness in protecting the forests. Loggers, and villagers searching for unused fertile land to clear for agricultural activities, increasingly found that the state forests were unprotected. Since the state forests had been removed from the control and supervision of the local communities, the local population had no stake in whether the state forest were preserved. Many of the state forests have been affected by both logging and clearing for agriculture. DEF does not have the resources at present to adequately protect the forests areas. Improving DEF's relations with rural communities and enlisting their cooperation and support in forest protection and conservation is an important element in enhancing DEF's capacity.

The WWF Debt for Nature project (Debt/Nature) is structured to both reinforce DEF's resources and to seek to move DEF toward a new mode of operation, particularly in terms of it's interaction with villagers. This evolution is reflected by references in the 1992 project evaluation to DEF personnel drawing a distinction between the "classical approach" as opposed to the "new approach".

D. PROJECT STRUCTURE

The Debt/Nature project was originally structured to augment DEF human resources at the local level. In effect it created an additional cadre at the basic Forestry Agent level. The Madagascar Agent Forestier (AF) is the person who has historically guarded the forest reserves and controlled their use. These additional cadre provided by the Debt/Nature project assist AFs in the control and preservation of Madagascar's forest resources, but unlike the AFs have no police power. These new individuals, who have less education than the AFs, are recruited locally and paid directly by the Debt/Nature project. They are hired on one year renewable contracts. They are called Agents for the Protection of Nature (APNs). They are supervised by the DEF Circumscription Chiefs (CIREFs), the same people who oversee the Forestry Agents.

One function of the APNs is to help AFs maintain the various classified forest areas of Madagascar. They are also responsible to: 1) inform and educate villagers living on lands adjacent to these forests about Madagascar's natural resource problems, especially as related to deforestation; 2) to help villagers undertake communal economic development and conservation activities; and, 3) in the process, to dissuade them from engaging in illicit forest clearing and wood harvesting activities. To accomplish these functions, the APNs must spend time each month both in the forest reserves, and traveling among and living within villages. They are provided with bicycles and per diem expense funds for this purpose.

To support the APNs the Debt/Nature project has set up a decentralized support and administration system and structure, alongside, and closely associated with DEF's own

structure. This structure consists of a WWF Debt/Nature project Central Office located at the DEF national Headquarters and DEF hired Debt/Nature project paid Coordinators, who are located at DEF Provincial (SPEF) and *Circonscription* (CIREF) offices.

More recently project funds have also been used for small projects to help villagers carry out community develop projects intended to either directly or indirectly support alternate agricultural and wood production methods and to encourage villagers to undertake conservation activities on village and state lands.

Another even more recent use of project funds has been to provide other forms of support to DEF, initially at regional levels, and now at the central level. This assistance has taken the form of facilities construction, uniforms and funding of training and conferences.

An extensive training program for APNs is also financed by the project and jointly carried out by project and DEF staff (a small amount of training is contracted from other sources). This training, conducted systematically over several years, is intended to better prepare the APNs to perform their village conservation education and promotion function, as well as to eventually become junior grade forestry agents within the Madagascar public service system.

Both the project support structure and the assistance to DEF are financed primarily from interest earned on $3.5 million of Malagasy private foreign debt purchased in several tranches. This debt was converted to local currency and deposited in interest bearing accounts. Until recently the project's costs have been born entirely from interest earned from these accounts. Adverse economic circumstances (inflation, lowered exchange and fixed interest rates) have recently forced the WWF to dip into capital.

E. PROJECT CLIENTS

The clients (beneficiaries) of the project are DEF, the villagers with whom the APNs interact, and, in a broader sense, the population of Madagascar and the world at large. DEF benefits from having an additional layer of personnel, a limited amount of budgetary, training, and other institutional support, and exposure to a different way of performing its mission and interacting with the local population. The villagers benefit from environmental education, and a limited amount of developmental and conservation assistance. Madagascar and the world benefits from a slowdown in the rate of deforestation and biodiversity loss.

F. TEAM COMPOSITION AND STUDY METHODS

The evaluation team consisted of three U.S. contract personnel with significant development and conservation experience in other countries and two senior DEF central headquarters officers. The Team's work was greatly facilitated by DEF and WWF Debt/Nature staffs at all levels; by USAID Madagascar staff, particularly the USAID Natural

Resource Management Specialist; and particularly by the Debt/Nature Central Technical Department Chief, National Coordinator and the WWF Debt/Nature Technical Advisor.

The study methods consisted of presentations by WWF Debt/Nature central staff, and interviews with DEF and other Malagasy government, NGO, other donor and USAID officials in Antananariva. The team interviewed selected DEF Provinical, *Circumscription*, and *Cantonnement* level officials, and held discussions with AFs, APNs and other field level personnel. Evaluators visited forest reserves, national parks and adjacent area field sites where APN activities are being or have been carried out, and had some limited opportunities for discussions with villagers in some areas of APN activity. The evaluation team was divided into sub-teams for the field portion of the work.

The evaluation effort was carried out over a four week period during which synthesis of sub-team findings and report drafting also had to be accomplished. Visits were made to only a limited number of field sites. The limited time per site allowed only for gathering of cursory, and for the most part, impressionistic data. The findings and recommendations should be read with these factors in mind.

SECTION II. OBSERVATIONS AND FINDINGS

The statement of work asks that the team analyze current activities of the Debt/Nature project to determine how well they are meeting the purposes and objectives of the project, and to suggest directions for future activities. This section briefly presents the team's findings from its analysis of project activities. Conclusions and Recommendations, along with supporting background amplification are set forth in section III.

A. CURRENT ACTIVITIES

1. Needs of DEF

The project has succeeded in giving DEF much needed human resources support. It has placed an additional layer of personnel at the village and forest reserves level. In contrast to the traditional forestry agents who have had primarily a control and enforcement role, the APNs have primarily an educative public outreach and village awareness role. The project has increased the government's direct contact with village populations concerning natural resource conservation and management. It has also changed, in part at least, its contact with village populations from one of control and enforcement to one of village involvement in conservation of forest and biodiversity resources.

The project has also provided DEF with infrastructure and commodity support on a small scale. Forestry Agent Support Projects called PASFs (*Projet d'Appui au Service Forestier*) have been undertaken to provide on-site housing, office and camping equipment and travel funds to permit Forestry Agents called AFs (*Agents Forestiers*) and their supervisors to spend more time in the field.

The PASFs were introduced into the project to help assuage ill feeling on the part of AFs and other DEF staff over the equipment and travel expenses being provided to APNs. There remains a problem in this regard stemming from the greater mobility afforded APNs by their provision with bicycles.

DEF has also been strengthened by Debt/Nature project APN training activities. DEF personnel serve as the trainers for the APNs and have benefited from the training philosophies and methodologies introduced by the Debt/Nature project. They also benefit from some of the new subjects pertaining to communication with villagers and other rural development topics which have been added to the more traditional forester training subjects. The traditional culture persisting within DEF both as to its mission and role and with regard to training methods, has not been helpful to the APN training effort. Manifestations of this traditional culture were observed by the team on several occasions during the course of the evaluation.

The *Petit Projets De Developpement Integre* (PPDI) have also provided a mechanism whereby villagers can become involved more directly and effectively in natural resource conservation and in their own development. Projects funded fall into two groups: those intended to directly benefit the environment; e.g. nurseries and outplantings for soil erosion and control; and those intended to provide indirect environmental benefits while assisting village development in other ways. In the latter, for example, support to reconstruction of a school or the building of beehives might be provided in exchange for village agreement to protect a defined forest against brush fires, undertake reforestation activities, or keep livestock out of protected areas. We believe the first type of project provides a better result than the second.

2. Partner understanding of project objectives

WWF/Debt/Nature project partners as defined by the USAID include: DEF, the contractors, cooperators, grantees and other organizations associated with related USAID natural resource conservation activities, other international and national non-government organizations and other donors active in Madagascar natural resource conservation activities.

We were not able to talk to representatives of all the above organizations. Our findings are based on a representative sample.

a. The debt swap

Understanding by partners of the first project objective of purchasing Madagascar commercial foreign debt at a discount and exchanging it for local currency as a means of reducing debt and financing conservation activities, is clearly apparent. Other international conservation agencies active in Madagascar have been quick to follow the WWF/USAID example, and imitation is the most sincere form of flattery.

The project's ability to invest the local currency acquired and operate its program entirely from earned interest, which it has been able to do until recently, has the value of allowing the project to sustain itself with minimal amounts of additional infusions of foreign assistance funds. This takes on increased importance as it becomes apparent that achieving conservation and institutional strengthening objectives will take a longer time than may have originally been anticipated.

b. Institutional support for DEF

Partners understand the DEF institutional strengthening objective, but a problem arises from disagreement by some cooperators with the Debt/Nature project's underlying assumption that the roles of the APNs and the AFs can be harmonized and combined within DEF. This disagreement has the affect of introducing some dissonance into cooperation among the partners, and weakens the overall effort in some areas.

3. Varying partner perceptions

There are two strategic issues. The first has to do with differences of view over the relative levels of resources allocated to work in an around the "Protected Areas" as opposed to the remainder of Madagascar's forest areas. Technically DEF is responsible for both but the former have been placed under the control of various operators whose activities are coordinated by a relatively new entity, the National Association for the Management of Protected Areas called ANGAP which is the acronym for its French title (*Association Nationale pour la Gestion des Aires Protégées*). Some DEF staff consider this a temporary arrangement.

The operators would like to have DEF APNs perform various functions within their areas of concern. DEF on the other hand feels that use of APNs should be limited to forest reserves outside the protected areas, given the much larger levels of external assistance already being devoted to the protected areas.

The second issue pertains to the historical role of DEF as forest policeman. Some partners feel that the community involvement role of the APNs is incompatible with the police role of DEF, which is the primary function of the AFs. They therefore see the connecting of the APNs and the AFs within DEF as a contradiction which adversely impacts on the effectiveness of the Debt/Nature project as a conservation program. Indeed some feel that the control and enforcement role of DEF, and corruption which is rumored to be associated with it, compromises DEF's role as a conservator of Madagascar's forest resources. Even those who would not go this far in their characterization still feel that the community education and involvement role of the APNs is incompatible with the enforcement role of DEF, to which they are inevitably linked.

4. APN effectiveness

The second issue described above, does, in the evaluation team's view, adversely impact on the effectiveness of APNs as a liaison between the village communities around forest areas and DEF. However we found the situation and the impact varied considerably from region to region and place to place we visited. In some places, where a relatively more heavy emphasis was placed by local DEF authorities on control and enforcement, APN effectiveness as a village liaison and stimulator of village involvement in conservation seemed definitely compromised. In other instances, APN success in helping establish village conservation and development committees, pursuading villagers not to cut, burn or clear land in forests, and helping villages undertake reforestation and land reclamation activities in areas adjacent to the forests, had clearly improved DEF - local community relationships considerably.

APN liaison effectiveness is adversely impacted as well by the other duties they are required to perform such as work in the forest reserves patrolling, demarcating boundaries, clearing trails, etc. The 1991 Permanent Instruction requires APNs to spend 15 days per month touring forest reserves. The APNs were originally authorized 15 days per month travel time, now reduced to 11 days to save costs. It is unclear how this time is divided between travel in the Forests and travel to Villages. The practice apparently varies by site. The time it takes to cover the distances involved within their geographic areas of responsibility is also a factor. In several villages we visited the villagers we talked to expressed a clear desire to see the APNs more often.

Two additional factors which come into play in determining APN effectiveness are DEF's capacity for effective field supervision and training of APNs. DEF capabilities in both these areas are adversely effected by its lack of physical resources, e.g. vehicles and equipment, which limit efficiency and mobility, and by the traditional organizational culture of DEF. While the latter is changing and the Debt/Nature project has been instrumental in promoting favorable change, we doubt that the Debt/Nature project institutional support activities are of themselves, and in their present form, sufficient to meet the developmental needs of DEF. A larger more conventional institutional development project, by USAID or another donor, providing more commodity assistance and more training and technical assistance is needed.

It would also be helpful if DEF had the ability to more rapidly remove or retire elements within its ranks who are resistant to change and to bring in new blood, but this is difficult in any government organization and particularly difficult for DEF now because of the government's acute financial situation.

5. DEF involvement in technical and administrative aspects of the Debt/Nature project

DEF is heavily involved in both the technical and administrative aspects of the project. Local DEF officials at the provincial, circumscription and cantonnement levels are are the administrative directors of their sectors. They are responsible for work plans, evaluations,

and all APN personnel matters short of firing. In the latter case, the SPEF or CIREF are on the personnel committee. They are the decision makers about the location and activities of APNs within their geographic areas of responsibility. DEF staff are also involved in the training of APNs.

We believe there has been some "trickle up" effect as APN training and interaction with the villagers in new ways has impacted on their superiors. In many places we visited it was apparent from their comments that the thinking of AFs had been influenced by their interaction with the APNs. The grouping of APNs for training has allowed them to see and learn about activities and approaches in other geographic areas which they can communicate back to other DEF staff.

The dynamism of the project and the fact that it has given DEF staff some additional resources and responsibilities has had a favorable impact on DEF capability.

Center level administrative functions are largely conducted by project staff rather than DEF. However the Debt for Nature Coordinator, who is a DEF employee, handles much of the administration and reports to the Chief of DEF.

6. Effectiveness of the project's administrative structure

We consider the relative simplicity of the project's structure, relative to many other USAID projects, to be a definite plus and very appropriate to Madagascar's needs and situation.

The administrative structure consists of a small central office in the capital at the DEF headquarters and 23 coordination units in provincial and sub-provincial DEF offices around the country. This structure helps to insure the project can respond relatively rapidly to local needs and helps insure that activities in the field can proceed without direction from the capital.

The decentralized character of both the functioning and administration of the project puts it in the forefront of the governments planning for political decentralization and local empowerment.

Given communications and mobility problems and that a project objective is to encourage local initiative and responsibility, we consider this structure and approach to be on balance a good one. However it does have the drawback of allowing DEF officials at the local level to give priority to more traditional DEF functions and approaches and to use APNs in ways which may not be in the best interests of the project or most effective for achieving the natural resource conservation needs of Madagascar. This latter point refers to the issue of DEF's authority and control organizational culture, developed in the pursuance of its historical mandate, versus the village cooperation and empowerment objectives of the

project, which as earlier discussed is a topic of debate within DEF as well as within the broader conservation and development community in Madagascar.

Some elements of the project have evolved rather slowly, a prime example being the PPDI. This seems to be largely a problem of the requirement to train up human resources in a new area of activity requiring a great deal of village interaction, given that the object is to develop the PPDI in a participative fashion with a good deal of responsibility lodged with the villagers themselves. At the same time technical support capacity has been limited. Project administrators feel sufficient training has been completed to allow for a decentralization of the PPDI program to the regional level. This should permit the development of additional PPDIs to proceed more rapidly and also speed up the approval process. It seems likely competition for funds between PPDIs and the PASF and other forms of financial subventions for the DEF establishment will become a problem if the latter continue to grow.

A potential problem noted in the 1992 evaluation report is still unresolved, namely, what would happen to the coordinators if the project were totally integrated into DEF. The coordinators function largely as adjunct administrative staff for SPEFs and CIREFs. Whether they could or would be assimilated into DEF in this capacity is unclear.

The coordinators also have difficulty making visits to APNs within their areas due to distances involved and poor road conditions particularly in the rainy season.

7. Project impact on the environment

The Debt/Nature project's most significant contribution to natural resource and forest conservation to date has been to facilitate a process of changing perspectives on how to manage and preserve Madagascar's forest resources. It is having an impact at two levels primarily: first, within DEF; and, secondly, within the villages surrounding the forest reserves in which the APNs work.

In the first instance the Debt/Nature project has helped DEF begin to move away from a historical forest management approach, which many argue has been more depletive than sustaining of Madagascar's forest resources and related biodiversity store. This impact has come largely through demonstration and training while adding badly needed additional manpower at the local level. There has also been an impact at central and intermediate levels of DEF.

At the local level impact has come through the educational efforts of the APNs and their encouragement of villager participation in forest management and reforestation. Actual on the ground results have been limited to date, but their potential for changing DEF-villager relationships and interactions, and the potential contributions of each to forest conservation and sustainable use is significant.

Unfortunately the ability of the Debt/Nature project to provide impact data is not yet well developed. There is no baseline data from which to work and little statistical data or other quantitative means to assess impact.

The Debt/Nature project has developed a flexible Activity Index for use in comparing geographic zones against one another and to compare activities between years in the same zone. It can accommodate staffing differences between regions, any number of activities common to all regions, or activities undertaken in some areas but not others.

The activity index is based on six activities: reforestation, tree nursery creation, public awareness meetings, village projects, creation of village committees, and reduction of brush fires.

The activity index, while useful for management purposes and for giving some indication of accomplishments, does not go far in measuring impact. Without being able to measure impact it is impossible to judge the value of the project relative to alternative investments. We consider this a major short-coming of the project, particularly since the need for priority attention to this area was highlighted in the 1992 evaluation.

8. Constraints encountered in project implementation

A number of the constraints encountered in project implementation have been identified:

- lack of clarity and agreement on mission, role and functions of APNs;

  (Note: The Debt/Nature staff feels the problem is more lack of communication than lack of clarity and agreement, and that the role and mission of APNs are adequately spelled out in the *Instruction Permanente* and the *Convention d'Execution*. However the evaluation team's view is that there is a lack of clarity in the above documents, and considerable lack of agreement both within and outside of DEF on the APN role and mission.)

- elements within DEF who are not receptive to a community based conservation approach;

- severe and continuing manpower and financial constraints within DEF;

- the project is spread very thinly relative to available manpower and financial resources;

- it is difficult to measure results, therefore difficult to know where to concentrate efforts.

- the project is implementing activities across a large geographic area and in different ecological and cultural regions.

9. Responsiveness of project activities to goals and objectives developed in the project

As previously noted, simplicity and a decentralized approach are two strengths of the project. Both encourage the flexibility needed to adapt to changing situations and greater awareness of problems, and the relative strengths and weaknesses of various activities. The addition of the small projects fund (PPDI), the provision of support to Forestry Agents (AFs), and the augmentation and decentralization of training are examples of responsiveness of the project management to dealing with impediments to project progress. In our judgement each of these activities requires further effort and refinement.

As elaborated in Section III, we believe the PPDI activity will be more responsive to goals and objectives of the project if the small projects are focused more on activities which have direct conservation impact and which enhance village income opportunities.

The provision of support to forestry agents, while increasing their mobility with travel funds, has left them still less mobile than APNs due to their lack of bicycles. This remains a cause of friction.

We believe training for APNs also needs to include greater emphasis on their role in working with villagers, to strengthen their capacities in this area, and less on the more traditional forestry service subjects. While the majority of the APNs we spoke to voiced this need, many higher level DEF officials, including some of the APN trainers seem more inclined to the opposite view. Their perception is that the knowledge and skills of APNs need to be strengthened towards more traditional DEF forestry functions.

The team feels that field activities being implemented through the changes in community internal regulations (*dina*) are the most promising element of the Debt/Nature project towards achieving the broader project goal of sustainable natural resource conservation and use.

10. Qualifications of project personnel to carry on project activities

The Debt/Nature project staff at the headquarters level appear both qualified and highly motivated. At the provincial and lower levels the situation is more varied and the team was only exposed to a small sample.

Personnel paid directly by the project, even if within DEF ranks, can be disciplined and terminated, since they do not have the status of civil servants. Hence it is possible to remove unqualified personnel. Procedures for doing so are spelled out in the Debt/Nature administrative manual, and have been applied.

In contrast DEF civil servants are virtually immune from discipline due to the complicated and time consuming process of doing so under Malagasy law and regulations. As is the case in many other countries, the result is that unqualified or mis-behaving employees are at best "disciplined" by being transferred elsewhere, usually to a more remote post, or left in their posts. The lack of either rewards or punishments is a drawback to motivation and performance. If APNs end up working under poorly motivated and performing DEF staff it can adversely affect their morale and performance. The DEF internal personnel system urgently needs to be reformed into one which provides adequate remuneration to insulate its staff from the temptation/necessity to engage in corrupt practices, rewards superior performance and penalizes inadequate or unlawful performance. Since the DEF 4personnel system is a part of the broader civil service system, we are skeptical this will happen.

11. Project impact on Madagascar's debt burden

The Debt/Nature project has purchased and repatriated about $5 million worth of Malagasy commercial foreign debt. This is roughly 6 percent of the approximately $80 million in commercial foreign debt estimated to be outstanding. Total outstanding Malagasy foreign debt is $U.S. 3 billion, of which over $U.S. 1 billion consists of arrears. Commercial foreign debt is only a small percentage of total foreign debt, so the WWF debt-swap deals with only a tiny percentage of total foreign debt. Therefore, this and future debt swaps (limited to commercial foreign debt) are unlikely to have any negative monetary or macro-economic impact. Thus the debt swap can be expected to have a small but positive impact on the Malagasy financial situation. Converting commercial debt does have the advantage that it converts the countries most expensive debt. Commercial debt carries much higher interest rates than does bilateral or multilateral debt.

Several Latin American countries suffered negative macro-economic effects in the form of severe inflation, when they converted large amounts of debt (billions of dollars) in equity swaps. The Madagascar government limits the amount of debt which can be converted in any year, but the small amount of commercial debt outstanding is not likely to cause such problems.

Inflation has increased from around 10 percent a year in 1993 to about 40 to 50 percent a year in 1995. Interest rates for borrowing from banks have increased to around 30 percent per year. (The project's interest earnings on deposited funds has been cut from about 15.5% to about 10%). This inflation rate will hurt the purchasing power of the capital fund which the debt swap created and reduces the possibility of meeting project expenses with interest income only. Spending a portion of the capital will reduce the length of time that the project activities can be supported with the original funding.

The government has relatively low expenditures as a percent of GDP. However, government receipts are very low (as a percentage of GDP) and the government has been running a substantial deficit. It is this deficit which is causing the rapid increase in the rate of inflation. The government has negotiated an agreement with the World Bank and the IMF to deal with these problems. One part of the solution under this structural adjustment agreement is the freeze on recruiting for the civil service. This policy limits any chance of the government absorbing the project's staff and expenses for the foreseeable future. For these reasons it is unlikely that project activities can be sustained if donor funding is not continued.

One caution for future debt purchases. As debt swaps buy down the total amount of commercial foreign debt outstanding, buyers are likely to receive less of a discount from the face value. While WWF was able to purchase debt worth $ 5 million with only $2.5 million, this ratio may narrow in future purchases.

B. FUTURE ACTIVITIES

This segment of the report responds to a series of questions in the SOW pertaining to directions for future activities. The most significant of the findings presented here are elaborated in recommendations contained in section III. Some of the SOW questions have been consolidated for ease of presentation.

1. Project elements which could be introduced, improved or expanded upon to more effectively respond to the needs of beneficiaries and improve conservation.

The team believes the strategy of the project should be re-thought with consideration given to a greater concentration of APNs and financial resources to increase impact in the highest priority areas. In section III we present alternative suggestions on how this might be done.

We also believe the work of APNs with villagers should be increased, particularly efforts intended to give villagers greater involvement in conservation oriented management and use of forest resources within their areas. Conversely, activities which either impinge on the time available for this work, or negatively impact on the APNs ability to perform it, should be reduced or eliminated.

Clarification and agreement on the mission, status and role of APNs within DEF and among the various partners with whom the project works or should work, will enhance both project results and the broader natural resource conservation effort.

An improved and independent monitoring and evaluation system, capable of better tracking of project impacts, and compatible with the evaluation framework being developed under ANGAP should be developed and put in place.

Improvement in the mobility of CIREFs and AFs is needed, either vehicles or motorbikes for the former and bicycles for the latter.

We believe that career opportunities within DEF should be expanded to allow advancement opportunities within the service for personnel engaged in community mobilization and empowerment activities related to forest resource management, without the necessity of these personnel assuming control and enforcement responsibilities.

Alternatively, the possible de-coupling of APNs from DEF in the future should be considered, depending on the progress and character of the government's decentralization policies. This alternative might be explored as a means of allowing APNs to perform a broader based rural development function linking villagers with a variety of development services provided from the commune, department or regional level.

2. Aspects of project programming which could be reduced or eliminated

We believe APN involvement in control functions should be reduced or eliminated. We also believed that the PPDIs involving "trades" in which villagers are induced to undertake conservation activities in exchange for project support to other village desired activities such as school construction or rehabilitation, are of limited value for conservation purposes.

3. Enhancing DEF participation in the Debt/Nature project

The team's sense is that DEF participation in the project has been steadily increasing. A program of limited logistical support to DEF was initiated in 1992 to counterbalance the support of this character to APNs. DEF Forestry Agents have become the APN training cadre. As of early this year an additional senior DEF official was added to the WWF project staff as National Director. Joint DEF - Debt/Nature committees have been established to coordinate monitoring and evaluation and to make decisions on PASF proposals. This year management training has been provided for the 70 DEF *Chefs de Cantonnements* who technically manage the APNs.

A second national seminar was held (the first was in 1992) at which all levels of DEF were represented. The object was to find ways of improving current project systems. The delegates to the national seminar were selected at previous meetings at regional and provincial levels. The result of the national seminar will be incorporated into an amended

technical and administrative manual to be distributed to all DEF and Debt/Nature field offices.

Also, this year, for the first time, the DEF Director will have a project budget for DEF Central. These funds are to be used in a fashion similar to the PASF, i.e., for rehabilitation of buildings, organizing interministerial conferences, etc.). This year the project also helped DEF organize a national conference for its foresters, to determine priorities and approaches.

The above developments illustrate a quickening pace of integration of the Debt/Nature project into DEF, and also a gradual shift of project funding from strictly APN related activities to more general funding support of DEF. The evaluation team questions whether these changes are desireable for several reasons.

First, we believe use of USAID resources for general funding support, which is in effect a subsidy to DEFs internal operating budget, will not produce as strong a result towards achieving the Mission's strategic objective of reducing natural resource depletion in target areas as will keeping these resources targetted explicitly on APN work to increase the role of villagers in natural resource conservation and management. We also think that achieving significant institutional change results within DEF will require a greater amount of external technical assistance and other resource inputs than is currently being provided or contemplated.

Secondly, we believe it remains to be seen whether further integration of the APN program into DEF is the best implementation strategy or whether alternative opportunities may emerge from the government's decentralization laws and the new forestry policy.

It is not yet clear, to us at least, how the government decentralization process will proceed or what possibilities will emerge from it for advancing the strategic objective of reducting natural resource depletion. It may be that more appropriate and productive alternatives for placement of the local action capabilities and resources now being fostered by the Debt/Nature project through the APN program may emerge.

Finally, we have not received any indication of a willingness on the government's part to assume financial responsibility for Debt/Nature project activities, nor does it appear that it will have the financial capacity to do so in the foreseeable future in any case.

Given these circumstances we believe it would be prudent to have the Debt/Nature project remain a part of DEF, but sufficiently autonomous in status that its activities can be suitably targeted, and that alternative placements and associations remain a future option.

In saying this we are not questioning the good intentions of current DEF leadership. We are merely suggesting that all parties concerned make a thorough examination of how to get the highest return towards achieving the objective of reducing natural resource depletion in target areas.

4. Sustaining project results

The SOW speaks of sustaining project activities, however in our view it is the results of these activities which we should be concerned with sustaining rather than the activities themselves.

In our view the project's purposes are, or should be, a means to an end. The end result sought is a mutually sustainable relationship between Managascar's natural resource base, reflected by its forests in this case, and its population. If project activities are making a sufficiently significant contribution towards attaining this objective, project activities should be continued until either the objective is achieved or a more successful way of achieving it found.

We believe that actions taken thus far to establish a means to evaluate the project's contribution to the USAID sub-goal and strategic objective #3 are inadequate. Whether the situation can be redressed at this point is problematic. Our recommendations, both for ways project results might be improved and ways to better evaluate them are contained in Section III.

SECTION III. CONCLUSIONS AND RELATED RECOMMENDATIONS

This section sets forth the Evaluation Team's conclusions and the recommendations flowing from them.

A. ROLE AND MISSION OF APNS

The evaluation team's perception is that in recognition of DEF's inability to protect the forests with forest agents, as noted in Section II above, WWF/Debt/Nature and the DEF have embarked on an evolution to a new system. The new system, if implemented properly, will give considerable responsibility for the management of local natural resources to villagers. This system is intended to create more effective and equitable methods to manage forest resources and better understand the needs of villagers. The new system is based on three critical elements: the APN, the AF, and the village forestry committee (*KASTI*). The APN's role is largely that of information transfer between the village and the DEF. The APN is not permitted to undertake enforcement activities (arrest, search and seizure, etc.) and instead works with the village committee to establish realistic estimates of village needs, to help villagers to obtain permits (to use the forest and forest resources) and to explain the consequences of poor resource management practices. APNs also work closely with villagers to organize small scale development projects. (Debt-Swap Amendment: 1991)

The transfer of responsibility to local communities is proceeding very slowly, whether within DEF or the broader decentralization movement. It has been hindered by political instability and national economic constraints which have led to a freeze on civil service recruiting under the structural adjustment agreement. The transfer also runs counter to a

tradition of fifty or more years in which authority has been increasingly concentrated in the Central Government. DEF's institutional culture is one in which many of the staff consider their prime responsibility to be the protection of forests resources through enforcement of the forest codes. In its short time in the field, the evaluation team observed only a few cases where a significant transfer of responsibility is really evident. In most cases, the major sign of this transfer of responsibility to local communities is the presence of the APNs as village level agents with some responsibility for sensitizing villagers to the needs of conservation.

RECOMMENDATIONS:

1. The evaluation team's view is that a community based conservation approach should be the primary focus of the Debt/Nature project. The goal of achieving transfer of responsibility to local communities should become a more direct and transparent objective of DEF-WWF/Debt/Nature collaboration. This objective should be more effectively communicated to the DEF rank and file.

2. One way of doing this would be to hold a workshop with SPEFS and CIREFS to discuss how to achieve the result sought. If the new forestry law is consistent with and supportive of the above objective, and if it is passed soon, the workshop could be timed to occur coincident with passage of the new law. The workshop could be followed by meetings in each CIREF for their *Cantonnments* and *Triages*.

B. CURRENT ACTUAL FUNCTIONS OF APNS

The current functions of APNs vary by region and by site. Their functions are strongly affected by other development assistance and conservation support programs in their zone which may provide funding and a broader and more developed program of activities. These include work in: agricultural extension with the Swiss funded Menabe Program in Morondava; forestry outreach with the GTZ funded *Project de Développement et Foresterie Integré* (PDFI) at the Manjakatompo Forestry Station near Ambatolampy; and various development for conservation activities with ICDP operators, such as at Ranamafana National Park. In most cases we observed, the APN activities seemed to be more focused and effective when they were being carried out in coordination with such broader assistance programs.

APNs assigned to a protected forest area typically spent much of the two weeks each month clearing paths through the park, clearing firebreaks and establishing park borders, and doing surveillance for illicit cutting and clearing within park boundaries. Those APNs near protected areas or near urban centers also spent a significant amount of time staffing road barriers to check for illicit forest products. The *Instruction Permanente* specifies APNs will spend 15 days each month doing surveillance work in the forests.

The amount of time APNs typically spend visiting villages in their zones is unclear. Often the evaluation team was told that APNs spend 15 (now 11) days a month on

sensabilisation tours. However the *Instruction Permanente* contains no such instruction to emphasize the importance of this function. The only place where a number of days is specified for an activity is under surveillance. Some APNs, particularly those assigned to a protected forest area, covered a zone only a few kilometers in radius. Others, like those assigned to the *cantonnement* office in Moromanga are visiting villages 65 kilometers from their base. During a visit, they will supervise the village nursery and reforestation site, check on progress of any PPDI, and talk to local *groupements* about some aspect of conservation. Topics covered include: the negative effects of and laws against bush fires, the requirement to have a permit to cut trees, the requirement to have a permit to clear land, the decline in availability of wood for construction and the advantages of reforestation, erosion problems and the need for erosion control, etc.

The most impressive accomplishment of the sensitization activities, which the evaluation team observed, is a change in attitude which leads to a modification in the local community contract (*dina*) to protect forest (and/or park) resources. This change positions the communities to take the forefront in managing and protecting their local resources. In the most notable cases, villagers guide forestry agents to the sites of illicit activity, even in the middle of the night, when community sanctions fail to stop the prohibited behavior. In these cases, DEF enforcement uses legal authority, if necessary, to back up and reinforce sanctions enacted by the local communities. These are cases where development activities do lead to the protection of the natural resource base as intended by the development for conservation philosophy. These cases demonstrate the possibility of improving resource protection without the need for a large DEF enforcement staff. They also reinforce the view that community-based natural resource management might, at some point, largely replace the traditional enforcement activities of the DEF.

RECOMMENDATIONS:

1. The changing of attitudes which result in a modification of local community contracts (*dina)* should be a major focus of the sensitization activities of APNs. This has the potential to greatly reduce the need for the other enforcement roles within the DEF and to render the development for conservation approach compatible with DEF's concern for protection through enforcement.

2. We believe having APNs spend more time on sensitization activities in village will, in most cases produce a higher pay off than time spent on traditional surveillance, control and enforcement activities. We recommend the *Instruction Permanente* be revised to specify that a minimum of two weeks per month be spent on this activity.

C. DIFFERING VIEWS ON APPROPRIATE APN ROLES

There is presently little agreement within the environmental community in Madagascar, or even within DEF, as to what the role of the APNs should be. The Director of DEF says that the primary function of the APNs is to sensitize the local population about conservation

and to facilitate community organization and development. However, since DEF is so short-staffed, the APNs are also needed as auxiliary forest agents to: help with the surveillance of forests and reserves, staff road barriers checking for illicit forest products, and generally serve as the eyes and ears of the forest service in filling its mandate to enforce forest codes. Many of the regional DEF staff believe that APNs should also be given the authority to arrest and impose sanctions so that they can better fulfill this traditional mandate.

The DEF director admits that there may be cases where the APNs are used more for surveillance, control and enforcement than for community and rural development, but says that these are aberrations. Unfortunately the limited sample of situations observed by the evaluation team was insufficient to determine which case is actually the aberration: when APNs are used primarily to sensitize local communities for community and rural development, or when they are used primarily for surveillance, control and enforcement.

If DEF is to move towards community-based natural resource management and is to use APNs primarily in this approach, it must undertake a major effort to inform and sensitize its own staff concerning this new orientation. It does seem disappointing that between 1991 and 1995, so little progress has been made in this regard.

Within the broader environmental community in Madagascar, there are at least four perspectives as to the appropriate role of local conservation agents. The spectrum of positions includes:

1. Surveillance, control, and enforcement is the primary function, facilitating community and rural development is secondary.

2. Facilitating community and rural development is the primary function, surveillance, control and enforcement is secondary.

3. The enforcement and development functions should be approximately equal in weight.

4. Facilitating community and rural development are the primary function and any role in surveillance, control and enforcement is incompatible with agents effectively performing the primary function.

We understand the new official policy at DEF to be that position number two is the appropriate role for the APNs, but judging from our exposure to the attitudes of the regional staff, the operative policy at the regional level more often seems to resemble position number one. Position number three might be said to represent the position of certain ICDP operators and ANGAP, which wants agents to staff a national park service. Other ICDP operators take position four.

Experience elsewhere is very mixed on this issue. Many people reject position one as an approach which has failed to protect Madagascar's natural resources and those of many

other countries. As natural resources become increasingly scarce and central governments are increasingly constrained by personnel and budget restrictions, the governments no longer have the resources to effectively protect the countries' natural resources without help from the local populations.

Relatively equal weighting of these functions might be said to characterize the approach of numerous park and wildlife services throughout Southern and Eastern Africa. Community organization has been facilitated and committees established to determine how to use the share of park and wildlife revenues distributed to local communities. Park guards and anti-poaching teams from the local communities have been recruited and trained and placed on salaries supported by the park or wildlife services. In many cases, poachers literally became the guardians of the parks and wildlife. The Campfire Program in Zimbabwe is perhaps the best known program using this approach and one which many other countries are trying to emulate. It would appear that many of these programs have relatively limited objectives with regard to community and rural development. They often remain more focused on the parks and wildlife than on development of the local communities. Many observers question whether this approach is sufficient to achieve effective conservation in countries with predominantly agricultural communities, rapid rates of population growth and ever increasing population density.

Many countries in West Africa have decided that it is inappropriate to try to turn the policeman forester into the farmers' best friend. They have generally opted to use rural development extension agents to facilitate community organization and development. There is a belief that in addition to training and personal attitudes, the institutional culture of the forest service makes the transition to a development orientation difficult. Furthermore, there is a fear that the function of control and enforcement creates an opportunity for corruption which poorly paid field agents will find almost impossible to reject. For these reasons, some people feel that the functions of control and enforcement are incompatible with facilitating community and rural development. Their position is that a single agent should not have both functions because such an agent can not be effective at performing the primary function of facilitating community and rural development.

There is relatively little experience with assigning village level agents the primary role of facilitating community and rural development, while maintaining control and enforcement responsibilities as suggested in the current DEF policy. Many people fear that given DEF's somewhat checkered history with regard to corruption, APNs will not be effective community and rural development agents if they are involved in control and enforcement.

One of the issues discussed at some length is whether local agents working in protected areas should have a different role and training than those working elsewhere. ANGAP argues that agents in the parks need greater technical skills to implement park management plans and activities. Others argue convincingly, that APNs need the same skills to effectively facilitate the development of management plans and activities within the territories of local communities. It may be necessary for the park agents to have more enforcement

responsibilities than many partners would like to see assigned to agents whose primary function is facilitating community and rural development. If continued enforcement is found to be necessary around the parks, it may be useful to separate the functions and have separate enforcement and development agents. Some, but not all ICDP operators, argue that such enforcement only hinders the process of moving towards community-based natural resource management. Other ICDP operators would like DEF or ANGAP to ensure enforcement so their ICDP agents can focus on community and rural development activities.

RECOMMENDATIONS:

1. DEF, ANGAP, ICDP operators and other partners should coordinate and harmonize the roles of the different organizations and field agents. A working agreement should be hammered out on the roles and functions of the APNs and other field level agents, and the appropriate relationship between DEF staff and those of the other partners. This relationship may change if ANGAP receives the authority and resources to establish a national park service.

2. USAID Madagascar and other donors should encourage the forging of common understandings and approaches on roles and functions of field forestry and conservation agents in Madagascar through the mechanism of their assistance programs.

3. The WWF/Debt/Nature newsletter should be used to more rigorously inform the DEF rank and file about the new policy of sharing responsibility with villagers for natural resource conservation and the intent to evolve the DEF function towards greater village involvement in natural resource management.

4. Debt/Nature project institutional support for DEF should include in-service training for DEF supervisory and professional staff at central, provincial and sub-provincial levels to promote greater awareness and acceptance that villager conservation education and the enlistment of villagers as partners in conservaton and protection of forests is now a primary part of their mission. Lessons learned from the APN, IDCP and other donor programs should be drawn upon to help DEF personnel better understand how to perform this mission.

5. Institutional support of this type, undertaken for the explicit purpose of making community based conservation and development a more integral part of the DEF mission and function, should replace or at least complement the more general budgetary support now being provided to DEF.

D. THE APN EXAM

The APNs are expected to be given an exam covering their four years of training some time between September 1995 and September 1996 (when it will be held varies by source).

This exam is the final step in an evaluation process which also considers the APNs performance in training sessions and on the job. Officially, the evaluation will determine which APNs are retained to continue functioning as APNs. However, most DEF field staff (including both AFs and APNs) encountered by the evaluation team believe that the exam will determine which APNs are fully integrated into DEF and the civil service in the immediate future. The DEF Director states that there is little likelihood of any group being integrated into DEF as civil servants in the foreseeable future, due to the serious financial difficulties facing the Government of Madagascar. He further states that the numerous unemployed graduates of the agricultural colleges would receive preference if civil service recruiting becomes possible.

Both APNs and much of the DEF regional staff seem to have developed false expectations of what this exam is about. APNs hope that they will be integrated into permanent civil service positions. DEF staff hope that the APNs will be upgraded to *agents techniques forestières*, authorizing them to undertake the direct enforcement activities from which APNs have been restricted (imposing fines, arrest). This will provide more human resources for what they consider to be their mandate and primary responsibility, i.e. enforcement.

RECOMMENDATION:

1. DEF and Debt/Nature should inform the DEF staff and the APNs concerning the purpose and consequences of the APN exam. DEF should develop a program to inform and sensitize its staff to the changing role of DEF officials, the new policy orientations of the institution and appropriate roles of the APNs within that policy framework.

E. APN TRAINING

APNs attend two training sessions a year of one to two weeks each in length. Some of the training modules take a full two weeks, others may take only a week or 10 days. Training is organized by geographic region: north, south, east, west and central. It is assumed that conditions within these geographic regions are similar enough that a single training program will be appropriate. The project has developed a three-year curriculum (following the initial training in 1991) and most agents have nearly completed this curriculum. While the same curriculum is used across regions, the content of a course may change because of differences in environmental conditions. For example, recommended forestry techniques may vary because of differences in rainfall, temperature and altitude.

A forest agent in each CIREF has been selected to serve as a trainer for the APNs in that area. Trainers attend a training of trainers course conducted by the project, based on a trainer's manual on how to prepare a training program which is then available to trainers as a reference. The Debt/Nature project has also prepared training manuals for each module of the curriculum which are provided to both trainers and trainees. APNs, therefore have

references covering roles and personal conduct, as well as extension and forestry techniques. The trainers are also responsible for monitoring and follow-up with the APNs. Trainers are taught to develop training objectives and to evaluate achievement of those objectives. The evaluation team was not able to assess to what extent, or in what manner, this actually occurs. The evaluation team was also not able to assess the training techniques actually used.

The major exception to this standard training approach is in the Morondava region where the *Centre de Formation Professionnelle Forestière* (CFPF) has been contracted to do the training on technical forestry. The central staff also organizes a portion of the training in areas outside the competence of the forestry agent trainers. The recent introduction of Particiaptory Rural Appraisal (PRA) would be an example.

If the primary role of the APNs is to facilitate community and rural development, one would expect that the primary thrust of APN training would be on community development, extension and rural development. The evaluation team is not convinced that this is true in the case of APNs, particularly since it runs counter to the institutional culture and attitudes of many of the trainers. Several trainers encountered by the evaluation team thought that they were training APNs with the objective of preparing them to be *agents techniques forestières*. It seems likely that if this is the objective, trainers will place more emphasis on technical forestry than on the community development, extension and rural development. The evaluation team does not believe that the curriculum is strongly enough weighted towards community and rural development to overcome the institutional culture that a DEF agent must, first and foremost, be a forester.

A second aspect of the institutional culture which training needs to help overcome relates to the meaning of "*sensibilisation*". *Sensibilisation* has traditionally been used by authoritative governments and agencies to imply an approach to working with rural populations in which the government or agency tells the local population what to do and what to think. This approach is directly contradictory to what most professionals in the field believe provides effective extension and community development. The Debt/Nature training manual on "*Technique d'Animation en Milieu Rural*" provides a very positive approach to extension and community development. However we are concerned about how effectively it is used, given the attitudes of some of the trainers we encountered.

The APN training also places a rather strong emphasis on APNs knowing the forest code, and the rules, regulations and permit requirements and procedures related to forest activities. It may be useful from an extension perspective to be able to instruct villagers how to legally gain access to needed forest resources. However, this emphasis seems to have more to do with the surveillance and control aspects of the APN role, and with the top-down "*sensibilisation*" approach to interacting with local populations. This again raises the question of whether enforcement functions and attitudes are compatible with effective facilitation by community and rural development by village level agents.

Training objectives are a function of the role and tasks assigned to the trainees. Present training seems to reflect the ambivalence about what that role should be. A very significant effort will be required to overcome the institutional culture within DEF to move towards community-based natural resource management and to practice community and rural development. We do not believe that APN training pushes strongly enough in this direction to overcome the contrary tendencies in the institutional culture. It seems likely that all of DEF, not just the APNs, need to undergo such training.

RECOMMENDATIONS:

1. The objectives for APN training should reflect the DEF policy position that facilitating community and rural development is the primary function of the APNs. DEF staff should be trained to integrate into this new policy orientation, rather than training APNs to integrate into the traditional forestry agent role.

2. The Debt/Nature project should evaluate the aptitude and capacity of trainers recruited from among the DEF staff, to train and prepare APNs for a new role and orientation which does not appear to be accepted and endorsed by some of those trainers.

F. CAREER DEVELOPMENT FOR APNS

APNs play a unique role within the DEF institution. While the APNs are presumeably intended to focus on community participation in forest management, the traditional DEF Forestry Agents are tasked more with forest utilization and law enforcement.

Due to his one year contract status the APN often perceives his job as temporary and without job security. Presently, career advancement within DEF does not exist for APNs. The only alternative for an APN to advance within DEF is to obtain the necessary education and training to become a DEF Forestry Agent. While there are Forestry Agent specializations (e.g., enforcement, timber production), there are no community Forestry Agent Specializations within DEF.

While the DEF staff's opinion varies regarding the need to create a DEF Forestry Agent community participation specialty, some of the DEF Forestry Chiefs we spoke to believe that APN field experience should be counted towards the education required to become a DEF Forestry Agent. Some of the DEF Forestry Chiefs appear to appreciate the APNs and the potential link between community participation and forest conservation. However, we believe that other Forestry Chiefs would prefer to have traditional foresters if given a choice.

Kenya is an example of another country which may be gradually changing its natural resources institutions to work more closely with local communities. The USAID/Kenya is

providing assistance to the Kenya Wildlife Service to assist in this process through its Conservation of Biologically Diverse Resource Areas (COBRA) project.

Under the COBRA project, the Kenya Wildlife Service has trained a cadre of community development specialists who work in the Tsavo West National Park. Under a new Community Wildlife Service branch, plans were developed for these specialists to organize rural communities. A small grants program was planned to be used by the specialists to implement rural development projects with communities who live adjacent to the Park.

RECOMMENDATIONS:

1. DEF should be encouraged to develop a new career path for community forest agent staff. Salary, promotion potential, prestige and training required for the community-level career path should eventually be equal to or replace the traditional enforcement and forest utilization career paths.

2. A special educational program should be developed by DEF to train future Community Participation Forestry Agents. The training should include site visits to conservation and development projects in other countries.

3. USAID/Kenya should be contacted regarding the COBRA project. Information should be obtained regarding USAID/Kenya's success in changing the institutional structure of the Kenya Wildlife Service and the effectiveness of its Community Wildlife Service branch.

G. FOREST MANAGEMENT PLANS AND STRATEGIES

The evaluation team understands that modern management plans have not yet been developed for Madagascar's ICDP projects or other DEF forest management areas (e.g., classified forest). Further, we understand that DEF does not have up dated regional plans or strategies for the management of its forests.

The evaluation team believes that the development of forest management plans is one of the pillars of forest management. A management plan provides a set of objectives and key questions which are used to design, implement and monitor project activities.

Some of the elements a forest management plan usually includes:

(1) identification of the needs of local resource users;

(2) the identification of forest area boundaries;

(3) goals and objectives of the forest area;

(4) identification of appropriate land use categories (e.g., intensive management, conservation, tourism, research, community development);

(5) identification of policies in need of reform;

(6) plans for the development of forest area infrastructure (e.g., roads, trails, tourism development);

(7) action plans and schedules to coordinate participating institutions and local communities;

(8) activity implementation schedules and resources needed; and

(9) development of an impact monitoring plan (Miller, 1995; USAID, 1995).

RECOMMENDATIONS:

1. The early stages of Madagascar's forest planning process provide a unique opportunity to integrate APN work plans into ICDP and other DEF managed forest area plans. While "community participation" is an important element of management plan development, the participation of DEF and other institutions is often equally important.

2. The evaluation team understands that the World Bank and the KEPEM project are assisting DEF to develop its forest management plans. USAID should explore opportunities to intensify this process. APN work plans should be integrated into these forest management plans as appropriate.

H. VILLAGE PROJECTS (PPDI)

The Debt/Nature project initiated the PPDI to respond to village-initiated requests for local development assistance. The villages identified their needs through village meetings and discussions. PPDI activities can be categorized into the two groups described below.

- Projects designed to benefit the environment directly (e.g., village tree nurseries, hand tools purchased for reforestation)

- Projects designed to benefit the environment indirectly (e.g., construction of a school, beehive establishment). These activities are funded in trade for village conservation activities: brush fire control, reforestation activities, or removing livestock from protected forests.

The evaluation team believes that the process whereby the villagers identify activities to directly benefit the environment has greatest potential. The traditional village constitution "*dina*", provides a mechanism to formalize agreements between the project and resource users which can enhance the sustainability of the environmental activities.

However, we believe that the PPDIs involved in activities to benefit the environment indirectly show less promise. The construction of school buildings for villages seems to be a "carrot" offered by the DEF to do reforestation activities which the village does not consider a priority. We were informed of schools being built for which there was no teacher. APNs often have to take a lead role in maintaining the village nurseries because villagers do not afford them a high priority.

RECOMMENDATIONS:

1. Concentrate PPDIs on activities which directly support natural resource conservation.

2. PPDIs can be used to provide programming and focus to APN activities in areas where other sources of program support are lacking.

3. PPDIs could also be established in concert with ICDPs and the ICDP planning process. The PPDI development process could be used to design ICDP development activities in buffer zones and serve as a mechanism for channeling IDCP development funds into these areas.

4. The PPDIs could be used to assist other communities to adopt promising activities observed in the field. The transport of key village leaders or farmers to sites which have promising activities should be considered.

5. USAID/Senegal should be contacted for information regarding success it has had establishing tree planting contracts with farmers through the Senegal Reforestation project and its successor, the Senegal Community-Based Natural Resource Management project. The REDSO/WCA Environment and Rural Development Office may also have some suggestions regarding the establishment of community agreements and conditions necessary for sustainable reforestation.

I. MONITORING AND MEASUREMENT OF DEBT/NATURE PROJECT IMPACTS

The Debt For Nature program has developed a modern data base for the purpose of tracking APN activities in the field. Some to the APN activities which are being tracked include tree nursery development, trees planted for reforestation and local community meetings held. In addition, they are also beginning to track activities which may provide some indication of rural community behavior change resulting from project (e.g., number of brush fires).

The presentation of project data to date is impressive. The central office project staff have data management skills and appear to understand USAID's interest in tracking people-level impacts.

However, a new monitoring system is required to better test hypotheses and to measure the link between APN activities and the conservation of forest resources. Information is also needed to measure DEF career staff behavior change or institutional change resulting from the program. The evaluation team recognizes that in some cases the project staff may be "breaking new ground" in tracking this kind of information. However, lessons learned during the pursuit of such information is long over due and vital to the USAID/Madagascar program and the international community as a whole.

Impact monitoring activity will be an effective tool for the project. For example, an impact monitoring system will provide project staff with the necessary information to make greater use of interventions which are showing promise in the field.

Some suggested objectives for the impact monitoring system are indicated below.

- Identify problems and opportunities and make implementation modifications
- Monitor measurable impacts on vegetation and human behavior change
- Identify lessons learned for adaptive management
- Test assumptions and verify linkages between institution building, APN activities, community development and forest conservation (Booth, 1993)

Integrated Conservation and Development Projects (ICDPs) in particular need to better integrate impact monitoring systems. A World Bank evaluation of ICDP projects world-wide indicated that very few projects have established systems to quantitatively measure, monitor and evaluate the effects of projects activities on local peoples living around protected areas and/or on changes over time in the biotic communities within protected areas (Brandon and Wells, 1992). The same thing could probably be said about state managed forest reserves.

How to measure impact in the Debt/Nature project raises a philosophical question: Should one expect field level impact of a project whose apparent objective is the institutional strengthening of DEF? Is the protection of the natural resources of Madagascar still a valid

(if unstated) objective against which the project should be evaluated and for which measurements of impact should be obtained? The evaluation team believes that strengthening DEF is actually a means to an end, as indicated in the objective tree framework for USAID/Madagascar's natural resource strategic objective. Since it is not an end in itself, one would expect to see impacts at the field level as a result of this institutional strengthening.

Impact can be said to be made up of 3 factors: frequency, scale and intensity. Frequency refers to how often something happens, scale to the area or population (people, animals, species, or other units or percentage of total units) affected, and intensity to the effect of some factor or activity on each unit of area or population. Debt/Nature is not measuring impacts which can be related to specific units of population or area. It is not measuring bio-physical or socio-economic impacts on specific areas or populations, or behavioral impacts on a specific population. For example, there is no indication of how large an area is affected by reforestation or how many people are planting trees. It is difficult to understand whether or not the impacts are significant without reference to some unit of population or area affected. It is also difficult when there is no baseline with regard to the situation prior to undertaking an intervention or set of interventions. If one doesn't know how many trees were planted in an area before the APNs arrived, one can not judge whether the number being planted has increased. The Debt/Nature project has not established such a baseline.

Another way of looking at impact is by using the "so what" question. The Debt/Nature monitoring measures the intervention rather than the impact of the intervention. APNs are planting trees, creating tree nurseries, holding public awareness meetings, creating village committees, addressing the brush fire issue and developing village level projects. It does not indicate what impact these interventions have in relation to a specific unit of population or area.

Informal data collection methods (rapid reconnaissance surveys and participatory rural appraisal) should be used to better determine the critical factors on which formal data will be collected. A substantial portion of the necessary baseline information can be collected using these informal methods. Comparisons can be made by repeating the appraisal activity in the same villages at a later date.

A problem of moving to data collection for impact monitoring is that it requires human and financial resources and training. The APNs can collect data if given several weeks of very fastidious training on how to fill out data collection forms. Someone with greater experience is needed to determine what data to collect, to design the forms, to train a data collection supervisor for each CIREF, and to train the data collection supervisors as trainers, so they in turn can train the APNs how to fill out the forms.

Appropriate training might be based on case studies or examples which provide raw information and require the agents to select the proper form and fill it out correctly. Since

many alternative situations will not be covered, data collection supervisors should examine the forms during visits to the village and provide on-going training in how the forms should be completed. Training will probably need to be both individual and group. Common problems can be dealt with during regular agent meetings and/or training sessions, but many particular problems will best be handled individually or by site. Many programs with important data collection functions plan on providing two or three weeks of data collection training, at least once a year.

Depending on the quantity of information to be collected, supervising the data collection effort is likely to require one person per CIREF (Intensive data collection programs may employ one supervisor for three to five enumerators.). The data collection supervisor should visit each APN site each month, check the forms which have been filled out, question any responses s/he does not understand and work through any problems in the manner in which they are filled out. Often a simple written guideline/reminder can help minimize the most frequent errors. The guidelines should specify the units to be used in each column, and/or an example of the style of answer expected.

It may be possible for the Debt/Nature CIREF coordinator to also serve as data collection supervisor, if s/he has the time. It may require greater regularity in site visits (including during the rainy season) than sometimes seems to be the case. This is likely to require a motorcycle for the data collection supervisor. If data collection is increased significantly, it may have a negative impact on the other activities of the APNs.

The project will also need data entry personnel. A single person might serve as both data collection supervisor and do the data entry for the CIREF, if computers were available at the CIREF office sites. Otherwise, the project will need several people at the central office doing computerized data entry. While centralized data entry may require less computers, data entry specialists often send forms back to the village for clarification when they do not understand the answer. The cost of the computers is likely to be offset by increased transportation costs. The quality of data will probably improve if it can be entered locally so unusual answers can be verified.

The project will also need access to someone who can do data analysis. This might be the person who designs the questionnaires and does the training of trainers, or someone who is contracted do the analysis.

ANGAP and the ICDP operators together have identified a large number of indicators related to ICDPs. Many of these indicators would relate well to the Dette/Nature project and specific APN sites with only slight modification. The evaluation team believes that the number of local communities changing their local constitution (*dina*), to protect local forest and park resources may be one of the more interesting indicators available. It may serve as a proxy for changing behavior in which the local community is willing and ready to begin protecting the local forest or park. This in turn may indicate areas were enforcement functions can be made the responsibility of these local communities.

RECOMMENDATIONS:

1. The Debt/Nature should rapidly develop a program to monitor and evaluate project impact using basic indicators and a socio-economic baseline. It should provide information on adoption of practices, local community behavior change, DEF institutional change and the extent to which Madagascar's vegetation is maintained or improved. WWF should covenant that such a program will be an integral part of any continuation of the project.

   The WWF Office of Economics and Social Science in Washington, D.C. has extensive experience in the development of impact monitoring systems and should be contacted for this purpose.

2. As recommended in the 1992 WWF evaluation, "baseline socio-economic studies need to be conducted in a pilot village in each *circonscription*. The parameters of these studies should be set out in the project action plan. Such studies would allow periodic monitoring of project impact on each village and allow for systematic comparison of project impact between circonscriptions. Successful methodologies and techniques in one circonscription could be tried in other *circonscriptions*."

   Alternatively, it may be better to collect some basic information in villages where the project is working, which can help project management, rather than use the pilot village approach. The number of villages or areas should be limited, as should the amount of data collected, but there is very little information to guide project and policy decisions related to parks, forests, peripheral zones, etc. Situations vary too much to rely on a single village to represent a given area. The pilot project approach may satisfy outsiders, but makes a very limited contribution to project decision-making.

   A third alternative which could be explored, given the costs associated with both the above alternatives, would be some form of participatory monitoring and evaluation process in which members of the community are involved in determining indicators and collecting data (see annex F).

3. Vegetation changes should be monitored directly and indirectly where the project activities are taking place. Aerial photography, field transects and village community surveys should be conducted as appropriate. Debt/Nature should investigate whether the satellite imagery used by ANGAP and the forest inventory activities of CI and the World Bank cover project areas.

4. The Debt For Nature project should not rely on other projects to monitor its impacts if it can afford to do its own monitoring. However its monitoring system should be compatible with monitoring systems planned by ANGAP and SAVEM. ANGAP and the ICDP operators have developed indicators which in many cases would be

applicable to the Debt/Nature project and APN sites with only slight modification. Debt/Nature should incorporate these indicators into its monitoring and evaluation system.

J. STRATEGIC FOCUS

The present project strategy is to support DEF to sustainably manage forest resources throughout the country. In contrast to a strategy which focuses resources, the project has chosen to increase its potential impact by dispersing its resources. For this reason, only a small percentage of project resources are targeted on national parks, protected areas or integration with existing rural development projects.
Two rationales were cited to us for this approach:

- Madagascar is undergoing political and institutional changes. Limiting project resources to specific geographical areas could reduce the ability of project staff to respond to political events and changes in local community preferences.

- International donors are already supporting ANGAP for the management of national parks and protected areas. DEF is the primary institution responsible for the management of all other national forest resources.

However, the evaluation team observed that APNs are more effective when working within the context of (or in association with) existing projects. Their role is often better defined, small project financial resources are better targeted and APN moral is higher.

The reason for an increase in APN effectiveness in association with existing projects may be a result of a number of different factors. For example, the operators interviewed at the Ranomafana National Park indicated that the APNs may be encouraged as a result of their feeling part of a larger development activity. The local communities may also be more receptive to APN assistance after seeing how the existing project technical assistance has provided tangible benefits.

The view of the Debt-Nature Technical Advisor is that there are several examples of the APNs and their DEF supervisors being very effective without links to ICDPs or other projects. Thus, in his view, the point to be emphasized is that APNs perform better where they have strong and continuous guidance (whether through DEF or Operators) than when such guidance is lacking.

The team accepts this view, but still feels there is merit in coupling the APNs not only with strong and continuous guidance, but also with other resources, and that doing so will increase impacts obtained. We at least feel it is an hypothesis which should be further tested.

RECOMMENDATION:

The project should seek to identify and place APNs in circumstances in which synergistic relationships can occur by combining their efforts with those of others or resources which are available from other activities, to maximize impact and results attained.

K. GENDER CONSIDERATIONS

Based on our observations in the field and perusal of documents made available to us, the evaluation team's view is that more attention could usefully be given to gender considerations in the conduct of APN work with villagers. We have included as an Annex, a report on gender sensitive participative rural research.

RECOMMENDATIONS:

1. The Debt/Nature project should take steps to insure that women are actively recruited for APN positions.

2. Greater attention should be paid to gender considerations in APN training programs.

3. The significance of gender should be examined and reported on during the conduct of participative rural appraisals, development and implementation of PPPDIs and similar village level activities.

4. The inclusion of women on village committees and attention to women's concerns should be monitored. It may be useful to require some portion of women members, or establish separate women's village committees which interact with the APNs.

L. FURTHER DEBT/NATURE PROJECT INTEGRATION INTO DEF

The Debt/Nature project was undertaken both to strengthen DEF institutionally and in response to DEF's desire to evolve in a new direction in regard to its role in managing and conserving Madagascar's forest resources. As indicated by our previous recommendations, the evaluation team feels much remains to be done in both these areas. We also feel that the political structure and policies of the government, particularly with regard to decentralization, and its financial situation, are so fluid that it would be a mistake to attempt to move too rapidly towards total integration of the WWF Debt/Nature project into DEF. Time should be allowed for clarifications to emerge concerning government decentralization and forestry policy.

RECOMMENDATIONS:

1. The further integration of the Debt/Nature project into DEF be deferred until government policy and legal frameworks and consequent DEF organizational changes have progressed to the point that they provide a satisfactory assurance that

this is the best course of action in terms of achieving USAID strategic objective results.

2. If a decision is taken to proceed with integration of the Debt/Nature project into DEF, serious consideration should be given to the need for greater and more direct institutional development and reform support to DEF, either through an enlarged Debt/Nature project, or a more conventional development assistance project. The capability and willingness of the government of Madagascar to commit the resources required to maintain DEF at the enhanced level of performance capability which should be expected to result from such a project should be a major consideration in a donor decision to undertake it.

3. In planning for and developing programs or projects to continue the Debt/Nature project, we believe USAID Madagascar, and its partners in the conservation and development area, should work to:

   a. Make community based forest management and conservation an operative policy of the government and more strongly reflected in the operations of DEF and other concerned government organizations.

   b. Establish a written working agreement among DEF, ANGAP, ICDP operators and other partners as to the roles and functions of the APNs and other field level agents, and the appropriate relationship between DEF staff and those of the other partners.

   c. Insure that Debt/Nature project funding remains concentrated on activities having highest value for achieving results in reducing natural resources depletion in target areas. The evaluation team believes this would be activities targeted directly at achieving community based natural resource conservation, however the this view should be confirmed by an M&E program designed to measure the results being attained.

SECTION IV. GENERAL OBSERVATIONS AND RECOMMENDATIONS

This section provides some general observations and recommendations on matters related to but not specifically germane to the Debt for Nature project.

A. ILLICIT CUTTING AND MARKETING OF WOOD PRODUCTS

A Swiss forester (Morondava) asserts that at times as much as 80 percent of the wood products in the markets may have been cut illicitly (Cuvelier: no date).

The World Bank financed *Marché Ruraux* in Niger makes an interesting link between community-based natural resource management and the control of illicit marketing (and cutting) of wood products. Wood merchants must have a certificate from the *Marché Ruraux* (local community organizations) for any wood products in their possession. The certificate indicates the wood products were cut in areas authorized by the forest service and the appropriate permit fees and taxes have been paid.

After perhaps 4 years of organizing, local communities with wood resources no longer allow wood merchants or their laborers to enter their forests. To get certificates, wood merchants are being forced to purchase wood from the local communities. This empowers local communities to manage their own resources and provides revenue and employment. The forest service helps communities develop forest management plans and a portion of the permit/tax revenue supports this activity. Most of the control/enforcement can be done on major roads and in urban markets. (Initially, rather heavy road control was used around areas where the system was starting up.) Any wood products without certificates are illicit. The system did require a policy change and passage of a law to establish the certificate system and the legality and authority of the *Marché Ruraux*. (For more information, contact Bob Winterbottom, Chief of Party, ASDG II, % USAID/Niamey. For those whom it may concern: people in *Marché Ruraux* cite the USAID Gueselbodi experience as primary antecedent of the new project.)

RECOMMENDATION:

DEF/donors should consider a program like the *Marché Ruraux* financed by the World Bank in Niger to link control of illicit marketing and cutting of wood products with community-based natural resource management.

B. WATERSHED MANAGEMENT APPROACH

The evaluation team observed that Madagascar contains a number of important watersheds. A watershed is a hydrologic unit that often is used as a physical-biological unit and a socio-economic-political unit for the planning and management of natural resources (Sharma, 1992). Watershed forest resources often maintain important biological resources and can be managed to provide goods and services without harming soil and water resources. The management of these watersheds are also important to downstream agriculturalists as a source of source of water. Their effective management not only insures they continue to provide a water source but also protects downstream areas from the negative impacts of erosion and flooding and siltation due to excessive water run-off.

The advantage of a targeted watershed management approach is that it encourages a land use management approach to natural resource management within an economic development context. Protection of biological diversity, community participation, and agricultural development can all potentially be managed within the context of a management plan and coordinated development process. The watershed management approach would also simplify the tracking of measurable impacts and would encourage a linkage to other USAID sector program activities (e.g., small enterprise development) within the geographical area.

However, a watershed management approach may also have far reaching implications which may actually disperse rather than concentrate USAID activities. This is particularly true with regard to the Mahajunga region as one of USAID's two high priority regions. USAID activities in the region to date focus largely on improving productivity in the coastal plain area. But the Betsiboka river and its tributaries drain much of the High Plateau and Mid-West regions north of Antananarivo.

In order to improve the Mahajunga region's watershed system, USAID would need to undertake soil and water control activities in an area covering thousands of square kilometers. Such an effort would require working with hundreds of villages to develop soil and water control programs. Since USAID would not appear to have the resources for such an undertaking, it would seem that the objectives would need to be much more narrowly focused. Alternatively, USAID would want to identify a smaller watershed in which its resources could be effectively focused.

RECOMMENDATIONS:

1. Use the watershed management conceptual model to identify areas where different USAID activities could have a synergistic effect: conservation of forests and parks, soil and water conservation, improved agricultural development, agricultural marketing and small enterprise development, health and population activities. Begin with one or two small watersheds and use the lessons learned to develop an approach which produces synergistic effects.

2. Identify lessons learned world-wide regarding the watershed management approach. Some examples of USAID Missions who should be contacted regarding their watershed management project experience include Guinea, Senegal, Haiti and Sri Lanka.

3. There may be smaller watersheds which have existing projects (e.g., Ranomafana National Park) in which the operators could develop focused watershed activities within the context of the existing or planned ICDP protected area management plan. The APN work plan could be integrated into this planning process and their activities would vary according to the conditions of the particular ICDP program and DEF policy (e.g., agroforestry, reforestation, community organization, enforcement).

SECTION V. LESSONS LEARNED

The following are some lessons learned which have emerged from the conduct of this evaluation.

1. Technical assistance staff who have experience and talent can potentially make a difference in an old entrenched institution. The WWF/Debt/Nature technical advisor is helping to create a DEF work environment which inspires Debt/Nature project and DEF staff, promotes individual creativity and rewards community level accomplishments.

2. Institutional support projects need to be designed with the same rigor as other projects. Hypotheses need to be tested, key questions continually asked and impacts monitored.

3. It is worthwhile to seek out the experiences of other countries who have already embarked on similar projects. Experience gained and resulting lessons about organizational change, community based natural resource management and forestry agent functions from similar projects in Kenya and other development countries could have been very valuable during the design and early implementation phases of the Debt/Nature project.

4. Collaboration and harmonization of activities is very difficult when there is no agreement between partners concerning how to achieve conservation objectives and the appropriate roles of field level agents in working towards those objectives.

5. An established organizational culture may hinder the implementation of new organizational policies and orientations if the staff of the organization does not participate in the reorientation, or is not adequately informed of the need to change traditional practices.

6. To resolve differences and arrive at common approaches, all partners need to be well informed about what is actually happening "on the ground" in local development projects. Because of varying interests and cultural perceptions what is actully happening may be quite different from what is presented in formal documents and presentations. Acquiring a good understanding of local conservation and development activity results will require significant time spent in the field talking to villagers. This is best accomplished by personnel able to speak the local language and familiar with local customs, who are not connected with and do not have a stake in the activities concerned.

ANNEX A

SCOPE OF WORK

I. PROJECT DATA

Project title :	Debt-for-Nature Swap
Amount authorized :	$ 2,500,000
Amount obligated :	$ 2,500,000
Project number :	687-0112
Contractor :	World Wide Fund for Nature
Recipient :	World Wide Fund for Nature
Sub-Grantee :	World Wide Fund for Nature
Implementing Agency :	World Wide Fund for Nature
PACD:	(original) 10/30/92 (revised) 09/30/95
USAID Project Officer:	Carl M. Gallegos
USAID Project Manager:	Jean-Marc ANDRIAMANANTENA
Date of last Evaluation :	February 1992
Project purpose :	To increase the financial and technical resources available in Madagascar for the protection of natural resources and to reduce Madagascar's debt burden.

II. PURPOSE OF EVALUATION

The purpose of this evaluation is to:

a) Assess the progress and impacts of the Debt-for-Nature Swap project, especially the period since the January/February 1992 evaluation

b) Suggest specific changes to improve the project's effectiveness in the field for the remaining project period

c) Recommend future objectives and strategies for the project and procedures for complete integration of the project into *Direction des Eaux et Forêts (DEF).*

III. BACKGROUND

A. Project Background

For the past 10 years, WWF has supported a wide variety of conservation activities in the country of Madagascar including biological inventories, establishment and management of protected areas, development of buffer zone projects, technical assistance, training of Malagasy conservationists. In 1986, WWF drafted an Action Plan for the Conservation of Biological Diversity in Madagascar, which identified the specific, highest priority projects to be undertaken over a five-year period to ensure the greatest measure of protection to Madagascar's biological diversity. Since 1987, WWF has participated in a joint planning effort with the Government of Madagascar, the World Bank, the U.S. Agency for International Development, the Swiss Corporation, UNDP, and UNESCO to develop a comprehensive Environmental Action Plan (EAP) for Madagascar. WWF is taking an active role in developing the first phase of the EAP--the Environment 1 project- which focuses primarily on improving the management of the country's protected areas. Through these and other activities, WWF has confirmed itself as the leading conservation organization devoted to the conservation of biological diversity of Madagascar.

WWF is also the leading conservation organization engaged in arranging debt-for - nature swap in developing countries. Debt-for-nature swaps were first proposed in 1984 by Dr. Thomas Lovejoy, then executive president of WWF. The idea behind the proposal was a simple one. Most banks in the developed countries hold a large amount of debt from a group of approximately 20 third world countries, and it appears increasingly unlikely that this debt will be repaid in full. Most of these debtor countries suffer from the dual problems of economic underdevelopment and Natural Resources over exploitation. Burdened by debt payments, they are hard

pressed to allocate scarce funds to natural resource conservation. If some portion of their total debt burden could be canceled in exchange for increased support of conservation, then progress could be made on multiple fronts: debt could be reduced, natural resources protected, and investment stimulated within the debtor country itself.

WWF was seeking to arrange a debt-for-nature swap in Madagascar, and it was asking support in the amount of $1 million over three years from the U.S. Agency for International Development for a debt-for-nature program in that country.

B. Project Activities

1. Project goal

The proposed program's overarching goal is to protect the natural resources of the nation of Madagascar.

2. Project Purposes and Outputs

Its purpose is to increase the financial and technical resources available in Madagascar for the protection of natural resources.

Outputs include:

* A debt-for-nature arrangement through which international donors can leverage resources for natural resource protection in Madagascar;

* Greater protection and better Management of high priority protected areas;

* Analysis of the status of unprotected forested lands and a set of recommendations for protection of biologically important species and habitats found on these lands;

* Development of proposals for new projects to conserve biological diversity in and around parks, reserves, and forests.

* Strengthened institutional capacity of government agencies to protect and manage parks, reserves, and forests.

3. Project Inputs

* Funds to acquire up to $ 3 million face value of debt for conversion to local currency under the debt-for-nature agreement and to support the hard currency costs of technical assistance, administration, and monitoring of debt swap;

* Financial and legal expertise to develop the debt-for-nature program and to acquire and convert debt.

* Technical assistance to undertake assessments of natural resources in order to develop broad recommendation for protection and management and specific proposals for new conservation projects;

* Administrative and technical services to manage the overall debt-for-nature program, disburse debt-swap proceeds, and monitor the use of funds.

IV. SCOPE OF WORK

A. Preliminary research

The contractor shall review Debt-for-Nature Swap and USAID/Madagascar files to familiarize her or himself with debt swap activities and planned outputs of Annual Work Plans as well as with the Mission's strategic Objectives No.3 program outputs and progress indicators. The evaluation team should read the following documents for background information: USAID/Madagascar Country Program Strategic Plan; Debt Swap Project Paper, 5/31/92; Annual Workplans and Reports; World Bank Staff Appraisal Report for EAP, March 1990; and Mid-Term review of EAP documentation, Fall 1993.

B. Handbook Requirements

USAID (Evaluation Handbook, p.23) requires that all evaluations examine several broad concerns that are applicable to any type of development assistance. These concerns are:

* **Relevance:** Are the development and conservation constraints the Project was initially designed to address still germane to Project strategies? Are the principal technical, policy, and institutional constraints being addressed by Debt Swap's project components?

* **Effectiveness:** Is the project achieving satisfactory progress towards the stated goal, purpose and outputs? Are the goal, purpose, and outputs as defined in the Project

Paper and PP supplement still valid? Is the Project achieving satisfactory progress toward Debt Swap Project outputs and USAID/Madagascar Strategic Objective No.3.?

* **Efficiency:** Are the effects of the Project being produced at an acceptable cost compared with alternative approaches to accomplishing the same objective?

* **Impact:** What positive and negative effects are resulting from the Project?

The Evaluation Team is supposed to go beyond the simple examination of inputs, outputs and the project Paper to explore these broader issues and in particular to access the utility of the Debt-for-Nature Swap Project as a model to be used for assisting the U.S. Agency of International Development in attaining its environmental goal.

C. Illustrative Issues and Questions to be addressed

1. Analysis of current activities:

a. How well do current Debt-for-Nature Swap project activities reflect the needs of the DEF (effectiveness, perception by the target populations) and the environmental priorities of the Malagasy government?

b. Are the project objectives understood by all of the partners (DEF, WWF, AID), and collaborators (GMU, MEADR, ANGAP, ONE, ANAE, Cooperation Suisse, and Conservation International)?

c. How is the project perceived by the above partners and other partners in the field (Services Décentralisés, villages, and local NGOs)?

d. Are the APNs an effective liaison between the communities and DEF? Is there sufficient capacity in DEF for effective field supervision and training of APNs?

e. Has DEF been involved in the technical and administrative aspects of the program and has its capacity been strengthened as a result?

f. How effective is the project's current administrative structure, both central, regional and local administration of APNs? How could it be improved?

g. What impact have the project activities had to date on the environment?

h. What constraints have been encountered in project implementation?

i. Are project activities still responding to the goals and objectives developed in the project? If not, have new activities been developed and approved by project partners?

j. How has Debt-for-Nature Swap Project contributed to natural resources and forest conservation in Madagascar (cite specific examples and scale of impact)?

k. Are the project personnel qualified to carry on project activities?

l. Has the project helped to reduce Madagascar's debt burden?

2. Directions for future activities:

a. What elements could be introduced, improved, or expanded upon in order to more effectively respond to the needs of the project beneficiaries and improve the conservation of natural resources?

b. What aspects of the project programming could be reduced or eliminated?

c. How can the participation of DEF be enhanced in the mid-to long-term given the shortages of DEF human and material resources and considering other institutional Support Program

d. Is it feasible to plan for an eventual transfer of the entire program to DEF, and if so how?

e. What is the capacity (financial and technical) of the government to take over the project?

f. What realistic steps can be taken to ensure the sustainability of project activities in the long-term?

g. What sort of database could be established to permit a long-term follow-up evaluation/assessment of field activities?

h. What sort of ongoing auto-evaluation system could be implemented by the project?

V. METHODS AND PROCEDURES

Methodologies and outputs of the evaluation will follow those prescribed in USAID Handbook 3, Chapter 3, and its supplement, USAID Program Design and Evaluation Methodology Report No. 7, "USAID Evaluation Handbook". In addition to a work

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Plan described in Section IV.A. above, the contractor shall also provide a final evaluation briefing to the Mission. Upon entering Madagascar, the contract team is to visit the Mission for a briefing and planning session. Prior to leaving Madagascar, the team is to hold a final debriefing with the Mission.

The evaluation Team will conduct site visits to selected field activities to directly observe implementation and will interview ANGAP, GRM personnel (ONE and DEF), international and national NGOs, community groups, and others.

A six-day work week without premium pay is authorized. Each contractor should bring a lap top computer. The contractor is also responsible for any required clerical support and/or translation services.

VI. EVALUATION TEAM COMPOSITION

A. General Requirements

The contractor team shall be composed of three individuals: **Institutional/Organizational Specialist, Development Specialist, and Forestry/Natural Resources Specialist.** Team members should be familiar with park management and integrated conservation and development project. The team should have extensive interdisciplinary skills with expertise in institutional management and project design and implementation, and past experience in designing and evaluating projects. The team should have experience in Strategic Planning coupled with Monitoring Evaluation.

The contractor team will be complemented by two other team members; one representative from the REDSO and one person from Department of Water & Forests. The Malagasy team member should have English reading ability.

B. Specific Requirements and Responsibilities

1. Institutional/Organizational Specialist

- 8 years of experience working in a managerial capacity in an organization, preferable with some experience in institutional development; this should include a minimum of 5 years experience in a francophone developing country.

- Must have at a minimum a Master's in organizational management, public administration, management sciences or related discipline.

- Analytical, organizational and writing skills.

- Must be experienced with PVOs/NGOs working in natural resource and rural development projects.

- Must have participated in previous evaluations.

- The Institutional/Organizational Specialist is responsible for production of report components assigned by the Team Leader.

- Fluent in the French language (minimum FSI S2.5, R2.5)

2. Development Specialist

- 10 years of experience in the design, implementation and evaluation of development projects, preferably with some experience with integrated conservation and development projects. This should include a minimum of 5 years of experience in developing countries.

- Must have participated in previous USAID evaluations and familiar with USAID evaluation guidelines.

- Must have a minimum Masters degree in a social science field.

- Must have the analytical skills to review the structure and function of the project.

- The Development Specialist is responsible for production of report components as assigned by the Team Leader.

- Fluent in the French language (Minimum FSI S2.5, R2.5).

3. Natural Resources Specialist

- 8 years of experience working with Natural Resources Projects, preferably with some experience with Integrated Conservation Development Projects. This should include a minimum of 5 years of experience in developing countries.

- Must have at minimum a Masters degree in environmental science, natural resources management or forestry.

- Analytical, organizational and writing skills.

- Must have participated in previous evaluations.

- The Natural Resources Specialist is responsible for production of report components as assigned by the Team Leader.

- Fluent in the French language (minimum FSI S2.5, R2.5).

The individual selected as Team Leader must have demonstrated the following:

- He/she must have led other evaluation teams or participated in several evaluations.

- The Team leader has final responsibility for managing the contributions of the other team members and delivery of the final report.

- Know and be familiar with application of the USAID Handbook regulations regarding evaluation.

VII. DELIVERABLES AND REPORTING REQUIREMENTS

A. Report Structure:

The report structure will include an executive summary, body of the report and relevant annexes. Both the draft and final versions shall be provided in both hard copy and electronic formats (Word Perfect 5.1 for DOS, on 3.5 inch diskettes).

The executive summary will include the objectives of the project, purpose of the evaluation, findings, and recommendations.

The body of the report should include:

1) the purpose of the evaluation;

2) description of the project structure, clients, questions and issues to be addressed;

3) team composition and study methods;

4) observations and comments supported by findings;

5) conclusions and related recommendations stated as actions to be taken to improve project performance;

6) lessons learned.

It shall not include a repetition of descriptive material available elsewhere in the project documentation.

The report should not exceed fifty pages (excluding annexes). The executive summary should not exceed three pages in length. Annexes should include a copy of the scope of work for the evaluation, a list of documents consulted and individuals contacted.

B. Schedule:

The evaluation team will meet with USAID/Madagascar Natural Resources office and other Mission Staff for an initial entry conference upon arrival to Madagascar. Initial draft of the report should be delivered (10 copies) to USAID/Madagascar within 21 working days after initiation of the work order. USAID/Madagascar will return the draft report with comments within five (5) working days after receipt of the draft report. The final report will be delivered (10 copies) within 29 working days after initiation of the work order. A final draft in both English and French is required.

An oral presentation of the initial draft will be made by the Team to the USAID/Mission. The exact date will be arranged between the USAID Project Coordinator and the team leader.

A final exit briefing to USAID/Madagascar will be made by the Team before they departing from Madagascar.

C. Performance Period:

The evaluation is to commence on or about March 20, 1995, for a period of 3 weeks. The final draft is due 29 working days after the initiation of the work order.

D. Work Days Ordered :

The team leader is authorized a total of 29 working days which includes an additional 5 days in Madagascar to put the evaluation report in final form. All other team members are expected to work for a total of 24 working days. Six working days per week are authorized.

ILLUSTRATIVE BUDGET

1. Salaries:	
$330 X 2pers X 24days	$15,840
$330 X 1pers X 29days(*)	$ 9,570
Multipier 0.93	$23,631
2. Travel:	
$6,000 X 3pers	$18,000
In Madagascar (Airfare, Taxies)	$ 2,500
3. Per Diem (Lodging/M&IE):	
In Transit: $217 x 3pers x 2days	$ 1,302
In Madagascar $182 x 2pers x 24days	$ 8,736
$182 X 1pers x 29days(*)	$ 5,278
4. Contingency:	$ 143
TOTAL	**$85,000**

(*) Team Leader's

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ANNEX B

REPARTITION DE L'EQUIPE :

PREMIERE SEMAINE :

* EQUIPE 1 :
  Destination :Morondava.
  - John Lichte.(Consultant)
  - Jerome French.(Consultant)

* EQUIPE 2 :
  Destination :Ambatondrazaka.
  - Gregory Booth.(Consultant)
  - Orose Venance .(Representant de la DEF pour l'évaluation)
  - Jean-Marc (Representant de l'USAID pour l'évaluation)

DEUXIEME SEMAINE :

* EQUIPE 1:
  Destination : Toamasina-Moramanga-Ambatolampy
  - John Lichte .(Consultant)
  - Orose Venance.(Representant de la DEF pour l'evaluation.)

* EQUIPE 2 :
  Destination : Farafangana-Manakara-Fianarantsoa
  - Jerome French. (Consultant)
  - Gregory Booth. (Consultant)
  - Jean-Marc (Representant de l'USAID pour l'évaluation)

Lundi 08 Mai 1995.

Le matin :

-Présentation de l'équipe :

* à Monsieur Carl Gallegos , Directeur du Bureau des Ressources Naturelles de l'USAID/MADAGASCAR.
* aux differents staff de NRO
* A Monsieur Paul Siegel , Conseiller Technique Principal WWF-Dette/Nature.

-Discussion sur la proposition de programme de l'évaluation .
-Discussions sur les Termes de Réferences.
-Lecture des dossiers sur le projet Dette-Nature. (WWF-Dette/Nature)

Apres-Midi : Bureau de WWF/DETTE-NATURE.

-Présentation de l'équipe :
  * aux Staff de WWF-Dette-Nature.
-Présentation du projet aux evaluateurs.

Vendredi 12 MAI 1995 :

Le matin:

-Présentation de l'équipe :

  * à Monsieur Raymond Rakotonindrina , D.G. de l'ANGAP.
  * à Monsieur Georges Scharfenberger, Conseiller Technique Principal.
  * à Monsieur Henri Finoana , Directeur de la DEF .

- Echange de vues entre l'Equipe 1 et l'equipe 2.

L'Après-Midi:

-Lecture des dossiers sur le projet Dette/Nature.

TROISIEME SEMAINE :

LUNDI 22 MAI 1995 /MARDI 23 MAI 1995.

- **Réunions** et échanges d'idées entre les évaluateurs (Equipe 1+ Equipe 2) (Bureau de l'USAID)

- Interview avec l'ANGAP .
- Interview avec GMU.
- Interview avec Monsieur Henri Finoana , Directeur de la DEF.
- Interview avec Monsieur Carl Gallegos , Directeur du Bureau des Ressources Naturelles de l'USAID/MADAGASCAR

- Début de la Rédaction + Préparation de la présentation (Debriefing).

MERCREDI 23 MAI 1995.

- Special Debriefing pour le Directeur de l'USAID et le Directeur du Bureau des Ressources Naturelles de l'USAID/MADAGASCAR.

- Aprés-midi : Debriefing de l'évaluation pour le Staff de WWF/Dette-Nature.
  et pour la DEF. (en Français)

JEUDI 22 MAI 1995.

- Debriefing en ANGLAIS pour l'USAID et les clients de NRO.

VENDREDI 23 MAI 1995:

- Redaction et dernière mise au point.

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ANNEX C

Bibliography

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ANNEX D
List of Individuals Contacted

USAID/Madagascar

Donald R. Mackenzie	Director, USAID Madagascar
Carl Gallegos	Director, Natural Resource Office
Jean-Marc Andriamanantena	Natural Resource Office
Robert Hanchett	Natural Resource Office
Lisa Gaylord	SAVEM Project Officer
Spike Millington	Natural Resource Office
Helen Gunther	Senior Agricultural Development Officer
Frank Martin	Mission Economist
William Hammink	Supevisory Project Development Officer

Central DEF Staff

Henri Finoana	Director, DEF (Direction of Water and Forestry)
Fleurette Andriantsilavo	Chef de Service Ecosystemes Forestiers et lutte contre feux de brousse
Raharinaivosoa Estelle	Chef du Service Appui Technique
Radiharisoa Monique	DEF
Rapatsalahy Rasonasy	DEF
Rarivomanana Philibert	DEF

Staff Central Dette Nature

Paul Siegel	Principal Technical Advisor, WWF Debt for Nature Swap Project
Georges Rakotonarivo	National Director, WWF Debt Swap Project
Rakotoarivelo Nivosoa	Administrateur
Rafenoarisoa Marie Paule	Responsable du Personnel
Ramialiarimanana Voahangy	Responsable de Formation
Razananaivo Rota	Responsable de l'Information
Andrianorovelo Pierre	Coordinateur National
Henri Celestin	Chef Departement Technique
Rasamiarisoa Pascal	Responsable Logistique
Ramangalahy Hery Lalaina	Responsable Financier
Miarinjara Jacob Amedee	Responsable des Petits Projets de Developpement

ANGAP

Richard Swanson	COP/TR&D (SAVEM) Techncial Assistance Team, Monitoring and Evaluation Advisor
Solonirina Ratrimoarison	Financial Administrator M&E Division

GMU

George Scharffenberger	Principal Technical Advisor
Christiane Randrianarisoa	Responsible for CAG grants

Ambatondrazaka

Randrianarison	Head CIREF Ambatondrazaka

Morondava

Rakotovao Pierre	Head, CIREF Morondava
Rakotoarison Bana	Head, Cantonnement Morondava
Ramanantsoa Clovis Michel	WWF Coordinator Dette Nature
Rakotonandrasana Michel	Head of CIREF training
Randriamaro Pasteur	Director, CFPF Training Center
Raonintsoa Paul	CFPF Trainer
Rakotomampianina Jocelyn	Head APN, Tandila
Ramaroson Alain	APN-MFD 2 (Marofandilia 2)
Herinavalona Lalao Ratovo	APN-MFD 2
Antoine	APN-MFD 1 (Marofandilia 1)
Zafimarojaona	APN-MFD 1
Randriamahefa Robert Mika	APN-MFD 1
Jerome Gulley	Peace Corps Volunteer,
Rivoarijaona Lala Albert	Collaborateur CFPF-Volet FPC
Botovelo	Collaborateur SAF-CO
Cabalzade Grion	Head of CAP, Programme Menabe

Fianarantsoa

Hilarion Razafimandimby V.	Head, SPEF Fianarantsoa
Ramiandrisoa Joseph	Head, CIREF Fianarantsoa
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Claude	Head, Cantonnement Farafangana
Tata Berthin	APN, Farafangana
Tata Ramaroson Roger	APN, Farafangana
Andrianadison Serger	APN, Farafangana
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Ralijaona	Chef SPEF
Rabemanantsoa Jean Claude	Chef CIREF Toamasina
Randriambohanginjatovo Réné	Chef CIREF Moramanga
Rakotonjanahary François	WWF Provincial Coordinator
Rakotoarivelo Tefiarihaja	WWF Coordinator, Toamasina CIREF
Rakotoarinivo Jean Baptiste	WWF Coordinator, Moramanga CIREF
Raveloson Florent	Head APN, Betampona
Rokotomanga Théodore	APN Betampona
Ledina Jean	APN Betampona
Randriamanantenasoa Rolland	Head APN, Moramanga/Ankaibe
Randrianirina Gaby	APN, Moramanga
Rakotondramasy Jules	APN, Moramanga
Rakotomanga Radanielina	APN, Moramanga
Andrianasolo Adolphe	APN, Moramanga
Herisolofonjatovo Miadanisina	APN, Moramanga
Randriamandimbisoa Heliarimanana	AF, Moramanga CIREF
Rabetafika Samuel	School Director, Ambodimaga
Andriamanana Mussard	Deputy Director, Project de Développement et Foresterie Integré (PDFI)/GTZ
Rakotoarisoa Michel	Head of Manjakatompo Forestry Station, Ambatolampy
Rakotoarivony Joseph	Vice-president of FITAMA

Other Contacts

Andrew Watson	COP KEPEM
Jerold Grosenick	Forestry Advisor, KEPEM/DEF
Egide Cantin	Environmetnal Foundation Advisor, KEPEM
Mimi Gaudreau	COP and cropping systems agronomist, IRRI Rice Research Project, Madagascar
Olivier Langrand	Interim WWF Representative, Madagascar
M. Ratsirason	Technical Advisor, Ministry of State for Rural Development and Tenure Reform
Peter Robinson	EEC tourism consultant
Alexis Byamana	Technical Coordinator of the Development Component

Lyn Robinson	Principal Technical Advisor, Ranomafana Park
Elena Shirley	USAID/CDIE/Prism Project
Pat Foster Turley	USAID Washington

ANNEX E

SECTION V
GLOBAL LESSONS LEARNED APPLICABLE TO THE FORESTA EXPERIENCE

Before commencing this section of the midterm evaluation, which deals with broader strategic and institutional considerations, a brief discussion of recent global "lessons learned" as they apply to FORESTA is provided. These should, however, not be taken as approaches that have direct application in all instances. Rather, they provide points for reflection and comparison.

Although still relatively new, the pioneer efforts launched under FORESTA embraces the convergence between (1) conservation and development strategies and (2) public and private sector institutional strategies. Some aspects of these are now a little better understood than they were a decade ago, and a base of international experiences exists to better assess FORESTA.

A. The Integration of Conservation and Development

The team reviewed the book by Michael Wells and Katrina Brandon, "People and Parks," a review of 23 highly acclaimed projects. The most important conclusions from their study is that the most successful programs combine the most difficult aspects of both rural development and conservation management. However difficult this may be, without such twinning, sustainable development will not occur. They further conclude that success within this strategic context is most likely to occur when three interrelated elements are introduced: (1) protected area management, (2) buffer zone development, and (3) local social and economic development. Beyond these strategic and operational recommendations, a series of common attributes to program success were identified.

A1. Stage Setting Preconditions

To conserve biodiversity, larger geographic, social, and economic environments must be incorporated. Five facilitating preconditions were deemed important: (1) a serious political commitment to this effort must exist at the local and at the highest level of central government; (2) legislation and jurisdiction to permit agile management under various resource unit boundaries and land use systems must be provided; (3) project development components should be coordinated with regional development initiatives; (4) secure attention to land ownership and other resource access rights of the project's intended beneficiaries, and (5) government institutions have to reorient their staff toward a more people centered approach that embraces all resource users.

A2. Scale of Project Operations

Most of the projects reviewed by Wells and Brandon (1992) were operating on too small a scale to address the many immediate problems they are trying to resolve. Unless the scale of operations is substantially increased, prospects for biodiversity conservation will continue to deteriorate.

A3. Participating Organizations

One of the clearest observations is that to address the enormously complex challenges cited, significant collaboration among governments, conservation groups, researchers, development agencies, and donors must be encouraged. The issues are complex and in many cases new biological processes and new operational systems are being introduced and relevant expertise must be sought.

A4. Local Participation

The sustainability of project advances strongly depends on the effective participation of local people in those activities that affect changed land use practices, economic incentives, and behavioral adjustments.

A5. Secure Financial Support

Long periods are needed to develop appropriate operational and technological interventions and to elicit local participation for generating long-term support. Project funding needs should be phased over time. Financial self sufficiency will not be achieved after only a few years.

B. Agroforestry Situation

It is only over the last decade or so that agroforestry has become such an important topic in natural resource management and development projects. There are numerus case site research reports and some project specific reports but few broader lessons learned synthesis reports. One exception, is the World Bank's report, "The Prospects for Agroforestry in the Tropics," written by P.D.R. Nair. The executive summary of this report is included in Annex E.

While the report notes that agroforestry is widespread in almost all ecological and geographical regions of the tropics, several important other conclusions emerge:

- Agroforestry systems are as many and varied as their functions, roles, and outputs.
- Ample scientific evidence indicates that the benefits derived from agroforestry should be considerably increased by appropriate scientific intervention.
- Scientific studies in agroforestry have been limited, and thus the potential of agroforestry remains vastly under-exploited.
- The current trend in agroforestry development shows an imbalance between large-scale development projects and inadequately low levels of research and educational support.

C. Private Nonprofit Institutional Approaches

The multitude of complex activities and services related to implementing the two strategic thrusts highlighted in the introductory part of this section must be aggressively promoted in cost effective and systematic approaches. These are not activities that can be provided quickly by most public sector organizations exclusively. A series of nongovernmental, non-profit organizations have been acquiring experience to provide long-term continuity, relevant technologies, free-standing independence, agile market responsive services, and networking with a larger number of complementary service purveyors from government and nongovernment institutions. Since this form of institutional development is so new, the forms so diverse, and universal applications so difficult to prescribe, several studies were reviewed to help assess FUNDECOR's situation.

Of the various researchers reviewed, Thomas Carroll's *Intermediary NGOs—The Supporting Link in Grassroots Development* was the most relevant to the evaluation. He analyzed 30 Inter-American Foundation (IAF) "intermediary organizations" regarded by the IAF as effective and competent. The operational and organizational attributes of the stronger performers are presented. While the team recognizes the multifaceted nature of such organizations does not always produce general conclusions and FUNDECOR is not exactly in the same category, there are some observations we felt had relevance to FUNDECOR.

C1. Organizational Strategies and Approaches

Functional specialty and a small size staff have proven to be important qualities. Organizations that implement a limited number of tightly connected projects performed better than those undertaking a series of loosely connected or unconnected series of activities.

C2. Financial Well Being

Not surprising, a solid financial base is a basic requisite for performance; according to the study, this was usually a diversified portfolio with core costs covered. Access to a secure core funding source is a tremendous boost since most donors have project-focused investment policies.

C3. Motivation and Leadership

Both competency and commitment from staff are needed. In isolated project areas where personal and family sacrifices are required, a higher sense of mission and common purpose are important factors. Successful organizations have creatively responded to this need. Inspired central leadership, particularly during the early years, is a definite positive factor. Leadership that exhibits a strong personality, commitment, and drive to provide focus, and which demonstrates capacity for constructively working external alliances are needed. The top organizations were able to weather serious internal strife and move on.

C4. Organizational Dynamics

While focusing on well defined goals and strategies are important, this attribute takes time to develop. A coherent agenda can be modified over time to include new or modified methods based on changing needs. The core programs of the better organizations were maintained instead of becoming too dispersed. Fine tuning was ever present. The best organizations responded positively to beneficiary input, usually via informal mechanisms, including day to day interaction.

C5. Capacity Building

There is a constant need to ensure that the most relevant and cost effective technical and managerial skills are being provided to project employees and intermediaries, including government staff. One of the inherent problems of all intermediary organizations and, in many cases, the NGOs themselves, is the need for appropriate training and related career development activities. The provision and management of staff training to ensure that quality services are provided is an important characteristic of successful organizations.

DESFIL REPORTS
Development Strategies for Fragile Lands

September 1994 No. 3

A Guide to the Process of Participatory Research

Examining the Role of Gender in Sustainable Natural Resource Management

A basic strategy of the United States Agency for International Development (USAID) is to promote sustainable development through the full participation, involvement, and empowerment of local peoples, both women and men. In keeping with this strategy, two projects with USAID funding, "Ecology, Community Organization and Gender" (ECOGEN) and DESFIL (see box, page 9), use participatory methods, including gender analysis, in conducting research in communities where they work.

By using participatory methodologies, researchers engage community members in the research process. Local men and women act as informants, as advisors, and as guides. They therefore both contribute to and learn from the research process. Finally, the products of the research are returned to the communities for their review and use.

This guide represents a collaboration between ECOGEN and DESFIL. It outlines some of the *steps* and *lessons learned* in participatory research in examining the role of gender in the sustainable management of fragile lands. The lessons learned are illustrated by *examples* from an ECOGEN case study conducted in Southern Honduras.[1] This guide is designed for those interested in participatory research as an aid in formulating research projects or as a training tool (see Training Notes, next page).

DESFIL promotes the participation of local resources users in the sustainable management of fragile lands. The multidisciplinary team, experienced in linking natural resources management and sustainable agriculture with the social sciences, includes: Bruce Ross, senior program manager and geographer; William Fiebig, agronomist; Elizabeth Adelski, anthropologist; Ismael Ouedraogo, economist; and Mary Hill Rojas, gender specialist, who wrote this issue of DESFIL REPORTS *with Anne-Marie Urban, Latin American Caribbean advisor for USAID's Office of Women in Development; formerly with the ECOGEN Project. Comments are welcome.*

THE RESEARCH PROCESS: PREPARATION

Step One: Formulating a Research Framework

A conceptual framework and working questions guide the research.

The central assumption for both the DESFIL and the ECOGEN conceptual frameworks is that development and the research that supports it begin with local resource users, both men and women. The ECOGEN approach, which guided the research in Southern Honduras, builds on recent research that has expanded the analysis of poverty, powerlessness, and environmental degradation to focus on gender differences in accessing and using natural resources. Its gender-focused, land-user approach emphasizes multiple uses and users of natural resources, recognition of indigenous knowledge, and treatment of rural people as research partners. The approach also includes analysis of the social, political, and economic institutions that influence the lives of the communities under study.[2]

Based on the ECOGEN framework and an extensive literature review, the goal of the study in Southern

DESFIL REPORTS *is published by Development Strategies for Fragile Lands, a project funded by the U.S. Agency for International Development G/E under contract no. DHR-5438-C-00-1090-00 with Chemonics International, Rodale Institute, Abt Associates, and DATEX, Inc.*

TRAINING NOTES

This guide to participatory research has two sections: a) *Research Preparation* and b) *Research Implementation*. When using the guide for training it is recommended that at least one session be devoted to each section. Ideally, a third session should be held to field test and practice the participatory research tools suggested under *Research Implementation, Step Two: Working in the Field*. The goal of the training sessions is for the participants to learn to draft their own research plans.

It is suggested that training proceed as follows: 1) The trainer presents each step of the guide, and the example illustrating it. 2) Participants, working in small groups, begin to formulate their own research plans. For example, the trainer presents *Research Preparation, Step One: Formulating a Research Framework*, by considering the conceptual framework and the research questions from Southern Honduras. Then, in small groups, the participants begin to formulate their own conceptual framework and questions based on their projected research. Or, in the section on *Research Implementation, Step One: Team Building*, the trainer reviews the importance of team building, again using the example provided. Then the small groups draft an agenda for the team building and orientation of their own research.

Honduras was to examine the links between gender, natural resource management, and sustainable development in four rural communities. The research questions were:

1) What are the roles, responsibilities, and rights of rural men and women with respect to natural resource management?

2) What strategies do rural men and women use to cope with environmental degradation and poverty, and how do these strategies affect gender relations within households and communities?

3) What are the policy implications of the research findings for community groups, nongovernmental organizations working in the region, the government, and the donor community?

Step Two: Partnerships, Place, and Personnel

Partnerships: The choice of research partners depends on the goals and priorities of the researchers, those funding the research, and those working with the communities.

In 1993—with the support of the USAID Office of Women in Development, the Ministry of Natural Resources of the Government of Honduras, and USAID Honduras—ECOGEN personnel designed a study to better understand the links between gender, natural resource management, and sustainable development in Southern Honduras. The Land Use and Productivity Enhancement Project (LUPE), ECOGEN's host in Honduras and USAID's principal project under the Honduran Ministry of Natural Resources, addressed rural productivity and natural resource management activities on the hillsides of Central and Southern Honduras. With an interest in enhancing its understanding of and attention to gender issues, LUPE was a natural partner for the research effort.

An initial planning trip to Honduras by the ECOGEN director established contacts with communities, extension agents, and government personnel. Based on these contacts, a research site was selected in Southern Honduras in the municipality of Choluteca where LUPE's extension personnel had direct ties with the communities. These ties facilitated introductions of the researchers to community members and the dissemination of information about the research project.

Place: The rationale for the choice of the research site should reflect the research goals.

The research study was conducted in a region where the Linaca Extension Agency, one of the LUPE-supported rural agencies in the Department of Choluteca, works with several community groups. The region was chosen primarily because of the important connection between the current environ-

mental crisis in the uplands of Southern Honduras and ECOGEN's mandate to explore local efforts to manage natural resources. The region was also chosen because of its relative isolation from the capital, limited access to governmental and nongovernmental services, and the lack of attention it had received in previous research on Southern Honduras.[3] In addition, Linaca Agency staff recently had completed a diagnostic study of the region and were enthusiastic about the opportunity to deepen and share their knowledge of the communities in which they worked.

At the time of the study, LUPE was working with eight Linaca communities. Four of them—La Picota, Agua Caliente, El Zapote, and Cerro Verde—were chosen for the study. The primary considerations for their selection were: a) population size—each community had more than 50 households; b) geographic location—at least one community was chosen from each of the region's three agroecological zones. In addition, the communities chosen included some which were close to the city of Choluteca and others which were more isolated.

Personnel: A multidisciplinary research team, with members both native to the area and from outside, allows for cross-disciplinary and cross-cultural insights.

Four researchers, all women, carried out the study. The team leader was a specialist in rural development and gender analysis from the United States. The other three researchers, all from Honduras, consisted of a biologist and two social workers. All four spoke Spanish and had experience working with rural people. One researcher was from Choluteca itself and guided the rest of the team through the cultural nuances of the area. A fifth team member, a sociologist and gender specialist from the United States, helped establish the project in the field and acted as an advisor during the initial field work.

The composition of the team allowed for cross-disciplinary insights by combining the social sciences and the technical sciences. For example, the biologist identified and documented medicinal plants, while other team members worked with individuals of the community to identify the plants' local uses and availability. At other times the social workers, trained in working with community groups, led group discussions while the other team members kept the focus of the discussion on natural resources and gender roles.

The single-sex team was considered appropriate because of the research focus on women and gender. Nevertheless, the team might have benefited from the perspective of a male team member, especially for the work with the village men, many of whom served as guides, informants, and advisors.

THE RESEARCH PROCESS: IMPLEMENTATION

Step One: Team Building

Continual team building among the researchers is a priority.

The five researchers met in Tegucigalpa for three days of orientation and training. The objectives of this initial team building were to: a) get to know one another; b) plan research strategies; c) train in participatory research methodologies and gender analysis. Getting to know one another included sharing professional and personal information and spending time together outside work. Research planning centered on designing the household interview guide. This focus helped the team discuss the substance of the research, incorporate the ideas of all the members, and assure that the whole team felt ownership of the project. During the training the researchers used a case study to consider the concept of gender and to understand gender analysis. They also practiced field research methods by carrying out focus group discussions, field-testing the interview schedule, and conducting transect tours to develop community profiles.[4]

Team building continued in the field. Virtual strangers before the project, the researchers lived and worked together in Honduras, sleeping in hammocks in the villages and sharing hotel rooms in town. Living and working together provided them the opportunity to learn from each other and to incorporate their suggestions and criticisms into the research structure. Though it might have been useful for the team to have developed a formal system for conflict resolution during the orientation, an informal system initiated by the team leader in the field created a

collaborative environment that encouraged dialogue and conflict resolution. One conflict, for example, concerned the scope of work. The intense requirements of the research often demanded extraordinarily long hours. Job expectations should have been more carefully discussed at the team orientation.

Step Two: Working in the Field

> ***Keeping gender at the center of the research agenda requires constant vigilance.***

The orientation had emphasized gender and gender analysis, thereby establishing common definitions and language for the team. It also focused the research on socially defined gender roles and data disaggregated by sex. Nevertheless, the team had to be constantly vigilant in keeping the gender lens on the issues under study, whether it was on specific natural resource management techniques or issues of community organizational development. It was all too easy to slip away from gender, especially in discussions about natural resources. The lack of water in the village, for example, often became the focal point rather than the strategies used by men and women to cope with the drought.

> ***A participatory research process requires tools that invite community participation.***

Participatory research values local knowledge and the active participation of the community. This study therefore relied on meetings and research methodologies specifically designed to engage the community members in the research process.

Introductory Meetings: The Linaca extension staff organized the first meetings to introduce the research team to community leaders, both men and women, and to hold community-wide, introductory meetings and preliminary planning sessions with the community. At these meetings, the team members addressed questions and concerns about the research, solicited the support and participation of community members, and found hosts and guides as research aids. Particular attention was paid to soliciting the ideas and help of women as well as men.

The level of attendance and communication achieved at these meetings influenced the reception and acceptance of the research team on subsequent community stays. In one community, few community members attended the introductory meeting because of insufficient notice. Subsequently, the researchers spent a good amount of time during the first extended stays finding guides, hosts, and advisors and establishing credibility and trust.

Extended Community Stays: During the first extended stays of four days in each of the communities, the team members lived with local families, establishing rapport and exchanging information and insights on life and work. With the continual assistance and insights of the men, women, boys, and girls living in the communities, the team members gathered spatial, time-related, and social data. [5]

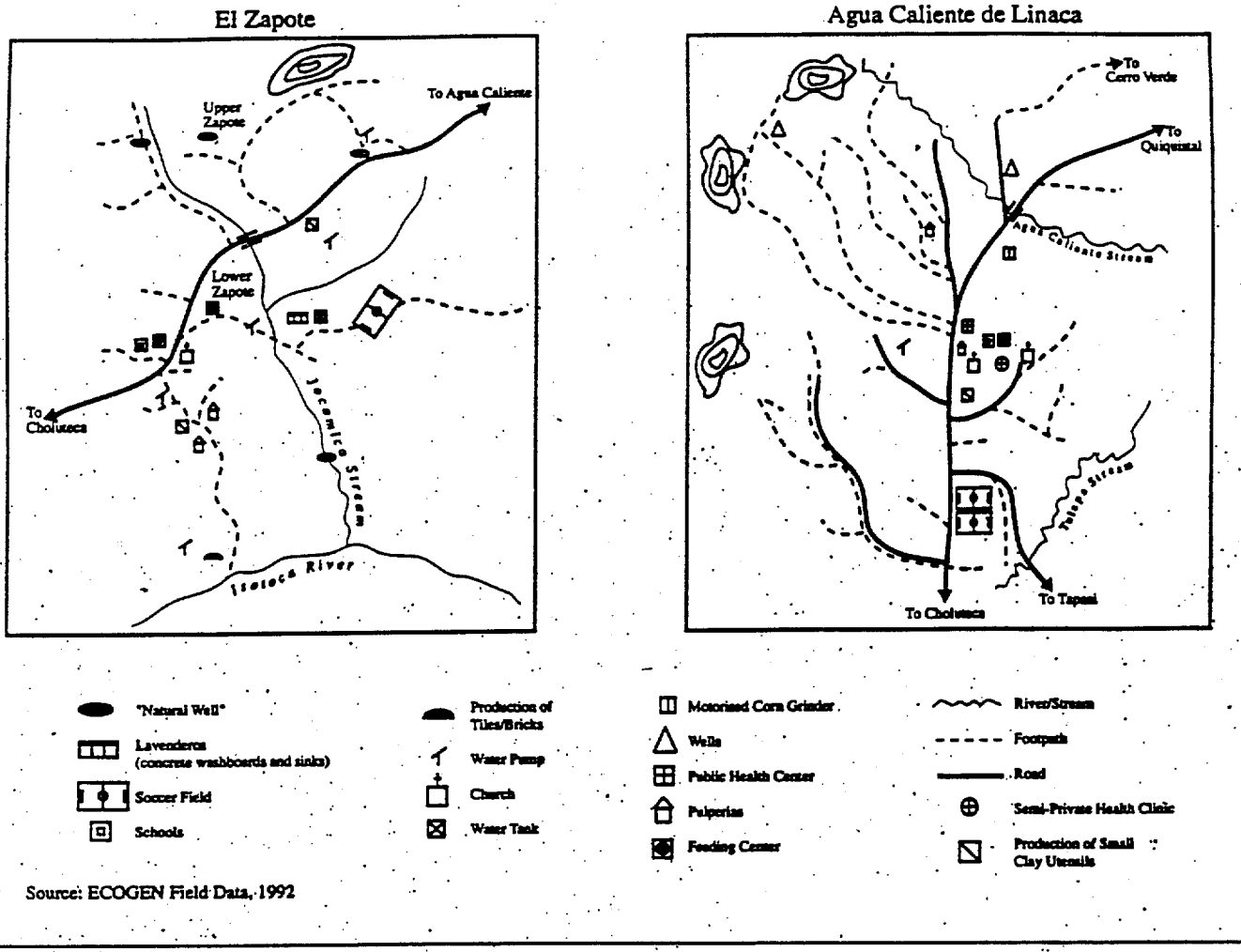
Spatial Data

The research team supplemented the available community maps with on-site surveying to develop current *sketch maps* of each community (see Figure 1). With the addition of the households, these maps enabled the team to draw a geographically stratified random sample for interviews.

To capture the diverse landscapes and resources of the communities and their people, the team collected more detailed spatial information at both the community and household levels. On a carefully planned walking tour transecting each community, the researchers and community guides noted the location and variety of cropping patterns, vegetation, water sources, socioeconomic status indicators such as housing types and domestic animals, and examples of natural resource management techniques. These *transects* resulted in the systematic development of profiles of each community's natural resources and their users, disaggregated by sex.

Each researcher, in collaboration with the men, women, and children of the communities, drew *farm and home sketches* of households from different socioeconomic backgrounds. The sketches indicated the variety of natural resource management strategies that were used by the households. The home sketches included the "solar," the area surrounding the house which is the primary domain of the woman and which often features a diverse collection of food and medicinal plants and tree species (see Figure 2).

Figure 1: Sketch Map of Agua Caliente and El Zapote



Source: ECOGEN Field Data, 1992

Included with the sketch was a list of all the plants in each solar and their uses as the family identified them. *Gender mapping techniques*, or labeling the landscape in terms of men's and women's labor and their access to and control over resources, were incorporated into several sketches to visually represent the gendered space in each community.[6]

Time-Related Data

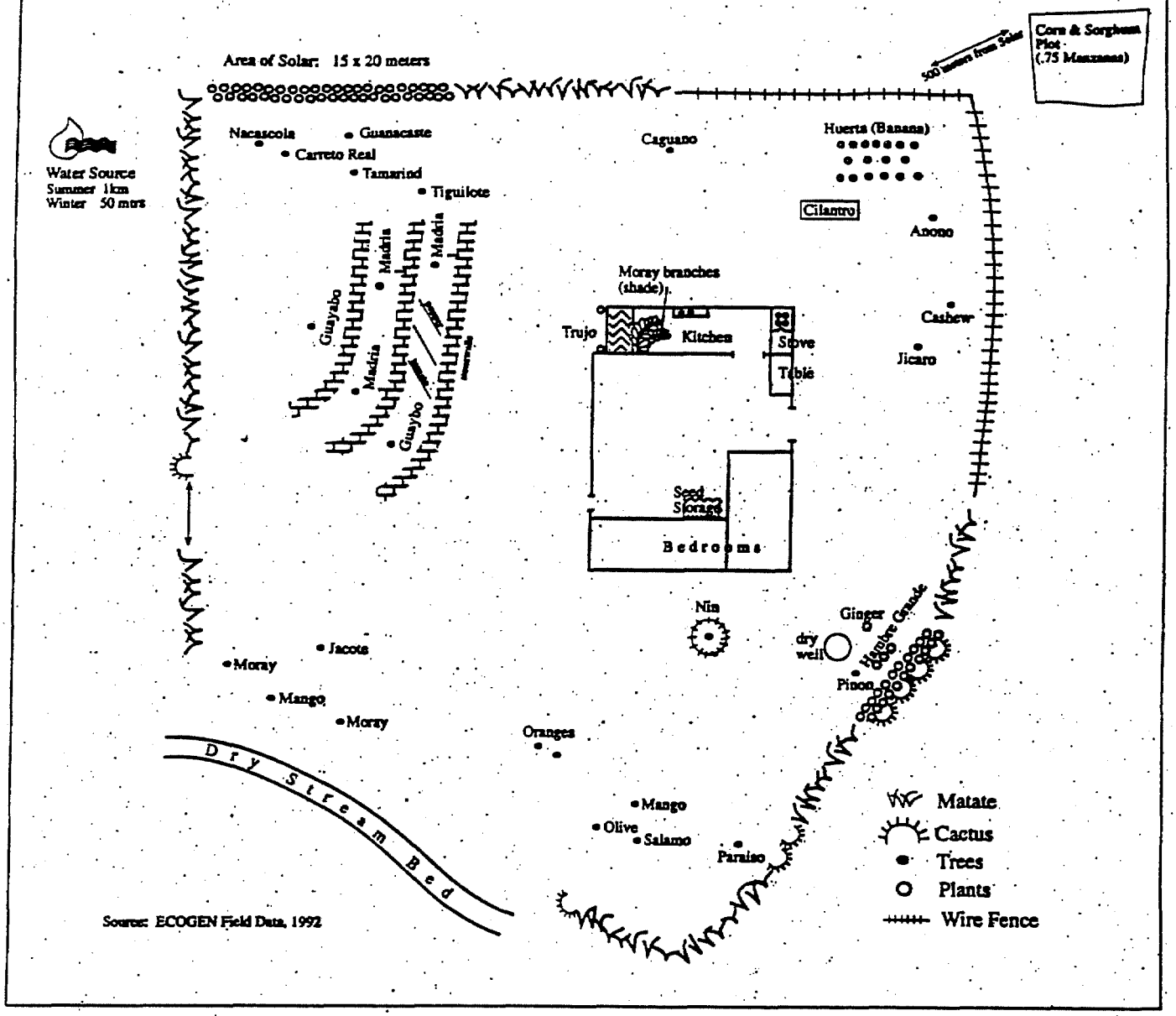
Community time-lines documented information about the unique historical development of each community. Two focus groups in each community, one with senior men and another with senior women, discussed community histories, emphasizing changes in the natural resource base and key community development initiatives. Men and women tended to emphasize different events in their community's natural and social history. These accounts were supplemented and broadened by subsequent interviews with a sample of community households.

Other time-related data included gender disaggregated *seasonal activities calendars* (see Figure 3), noting the activities of men and women at different times during the year, and *schedules of a typical day* for both men and women. Both these tools helped clarify the roles, rights, and responsibilities of men and women with regard to natural resources.

Social Data

The team conducted *in-depth household interviews* with community members, using rapid rural appraisal techniques to identify key trends, concerns, and other issues related to natural resource manage-

Figure 2: Solar Sketch - La Picota



ment.[7] The household interview guide developed during the team orientation provided an informal framework. Interview questions touched on diverse issues related to the systems of both production and social reproduction within the households and the communities. Key themes, disaggregated by sex, included daily activities, uses of, access to, and control over natural resources; elaboration of products both for sale and for home consumption made from natural resources; and involvement in community organizations. Care was taken to interview men and women separately whenever possible.[8] Additional social and historical data about the community and the management of natural resources were gathered through:

- *Key informant interviews:* conversations with both men and women leaders such as teachers, health workers, and traditional healers.

- *Focus group discussions*, organized separately for women and men, which yielded gender-disaggregated seasonal activities calendars, an analysis of each community's institutional structure, and a

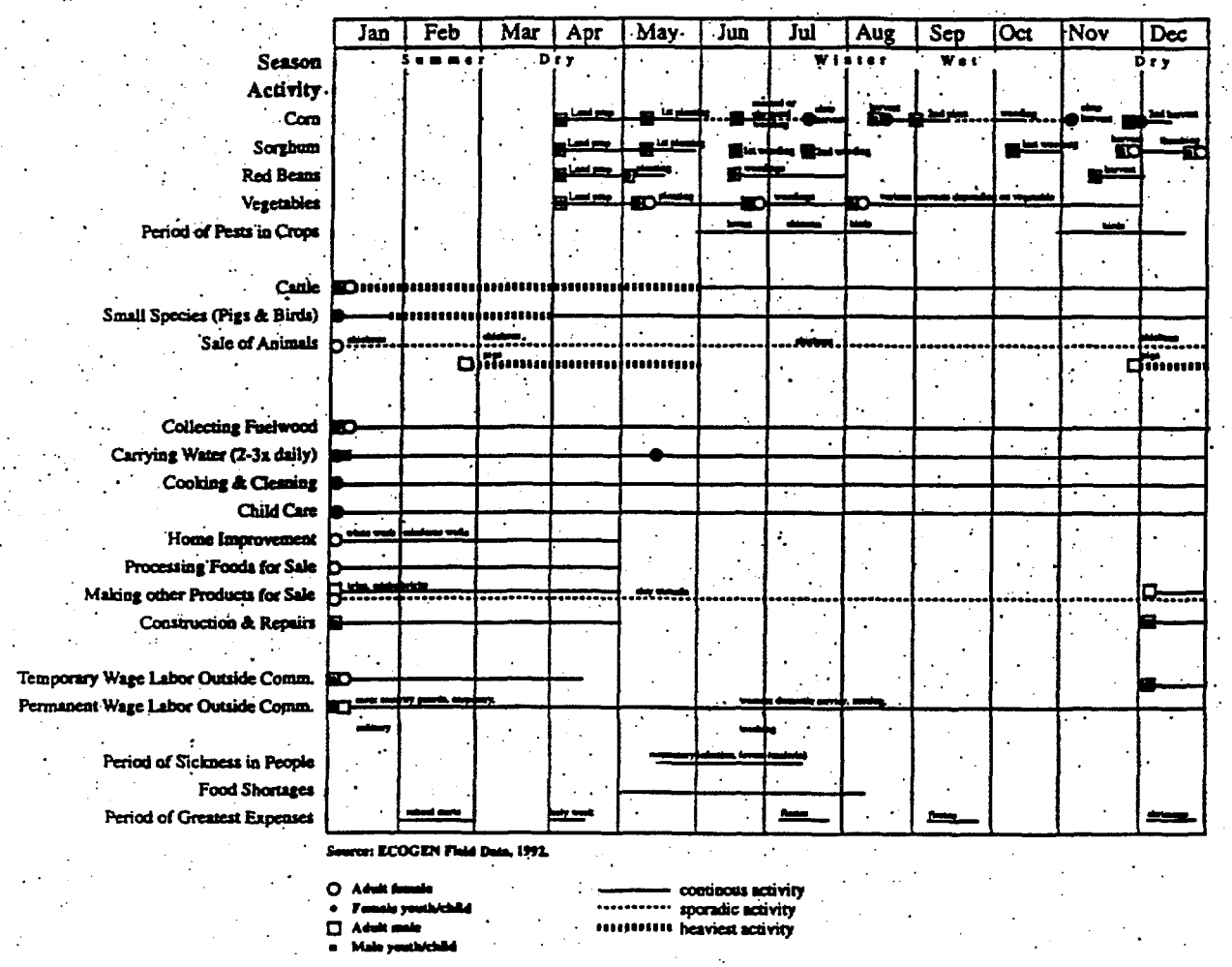
deeper understanding of the functions and procedures of local organizations.

- *Participant observation,* which increased the understanding of the work loads and management skills of women (who often downplay their public and household roles and responsibilities).

Participant observation, for example, helped the team clarify and expand its definition of the farming system. A narrow definition, from planting to harvesting, emphasizes male activities, resulting in many agricultural projects that are directed toward men. However, through observation it was clear to the team that men, women, and children—separately and together—were involved in agricultural activities. The men and boys were responsible for preparing the land, planting, weeding, and harvesting. The women and girls also participated in these activities, especially the weeding and harvesting, and were responsible for storage, shelling, grinding, and production of flour, tortillas, and other foods. The definition was expanded to describe the farming process from planting to tortilla, and in so doing included women and men, boys and girls.

Subsequent Community Stays: From the knowledge shared by community members in the first extended community stays, the research team constructed *a formal confirmation survey*, serving as the quantitative component of the research. The team returned to the communities for a second stay of four days with local females. Selecting a random sample of households from the community sketch maps, the team used the formal survey to validate previously observed phenomena about natural resources and their management, clarify inconsistent findings, and provide solid demographic data disaggregated by sex.

Figure 3: Gender Disaggregated Activities Calendar



At the same time, the team conducted additional focus group interviews to verify the seasonal activities calendars and to create institutional diagrams. Men and women were asked to rank the importance of community institutions as represented by various sizes of circles of paper and to show the relationships among them. The resulting diagram (see Figure 4) indicates that men and women ranked the relevance of institutions differently, often depending on gender-influenced priorities and involvements. Men, for example, gave the "patronato," the village council, a central role, while women emphasized the school and church-affiliated organizations.

Step Three: Data Analysis

Participatory research generates qualitative data that need to begin to be analyzed in the field.

Time should be scheduled during the orientation to train the research team in field data analysis. Although this was not done in the Honduras study, a system was established in the field to organize and begin to analyze the voluminous data gathered through qualitative, participatory research. After each village stay, the team members spent several days together organizing their data: listing medicinal plants, their uses and users; finalizing drawings of household gardens and fields with their gendered spaces; and developing natural resource maps of the communities and gender disaggregated seasonal activities.

Notes taken during interviews and focus groups were analyzed within the conceptual framework of the research project using *content analysis*. The researchers reviewed their notes for emergent themes and examples of them. These were written up, shared and discussed with the other members of the team, and synthesized by the team leader.

Participatory research can inform the more traditional research components of the project.

The research in Southern Honduras consisted of two parts: the participatory research in the four communities and more formal interviews outside the communities. One part informed the other. During the field work, men and women identified the key institutions that influenced the communities or that employed migrant workers. These institutions, headquartered outside the communities and including nongovernmental organizations, governmental organizations, and corporations such as melon and sugar plantations, linked the communities to broader regional, national, and international systems. The team spent more than two weeks interviewing personnel from these organizations. Building on the results of the participatory research in the communities in this way was critical to more formally analyzing "interactions between resource use and social dynamics at a local level and the responses and influences of political-economic processes at the macro level."[9]

A blend of qualitative and quantitative analysis confirms and validates the research findings.

The formal confirmation survey developed from the qualitative field data helped confirm the validity of the themes that had emerged through the content analysis done in the field. The research team administered one hundred quantitative surveys, fifty-six to women and fourty-four to men. Variables and coding categories for analysis of the survey data were established from the participatory field research data and secondary sources of similar research in Honduras and other parts of Latin America.

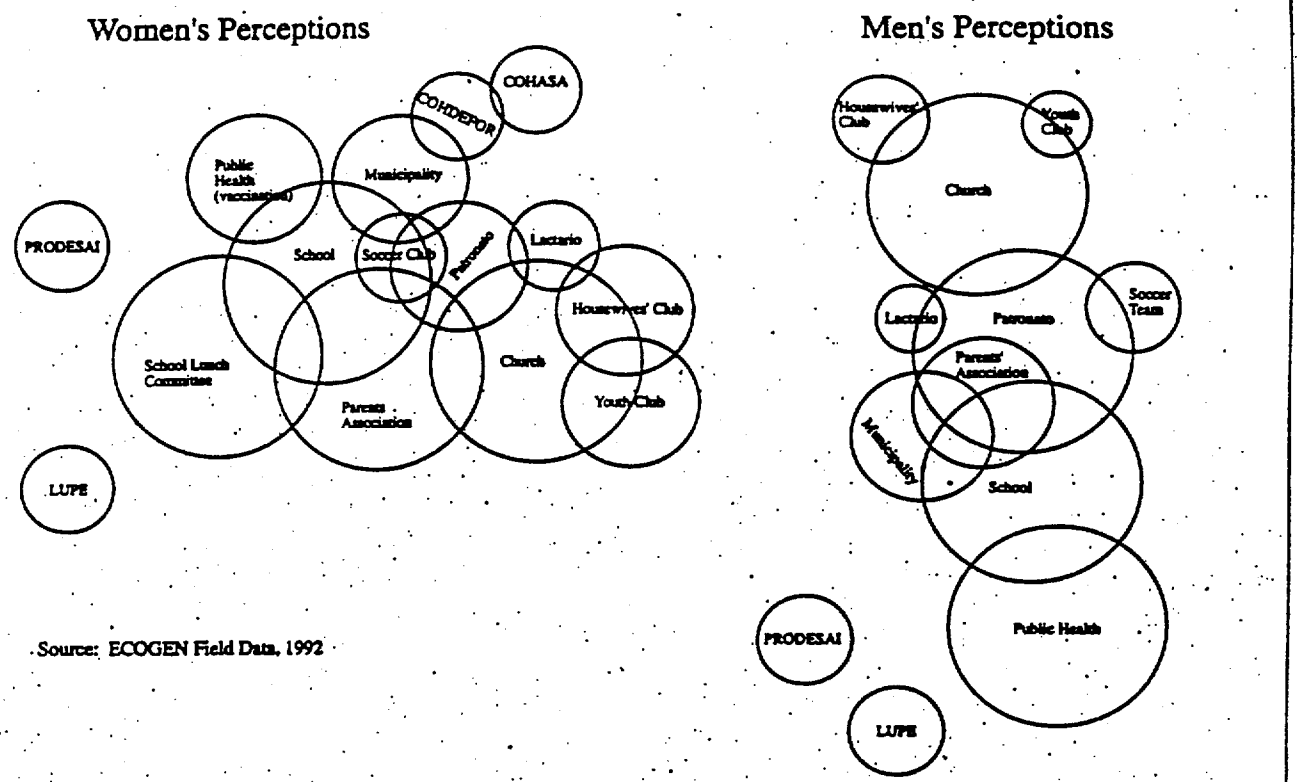
Analysis of the confirmation survey data involved the compilation of frequencies for each variable, bivariate analysis (i.e., key variables by community, gender, age, education level, household headship), and selected multivariate analysis (i.e., size of landholding or use of a specific conservation technique by community and by gender; membership in community group by gender and by age).

After the completion of the research, the team leader authored the final report and case study. The case study contains a combination of the quantitative data and the historical, descriptive, and anecdotal information from all the stages of the research process.

Step Four: Returning the Research to the Communities

Participatory research includes returning the research to the participating communities for their verification, critique, and use.

Figure 4: Institutional Networks in el Zapote



Source: ECOGEN Field Data, 1992

At the end of the field research process, the team prepared a portfolio of information, including maps and diagrams, for use by local schools and nongovernmental agencies in the region. At a final meeting in each community, local participants received a packet of materials including a sketch map, community history time-line, natural resource profile, a list of trees and medicinal plants and their local uses, and a list of active community organizations. They also received educational posters based on the research findings, including a calendar of gender disaggregated seasonal activities, the typical days of a man and a woman, a history of changes in natural resources, and examples of community conservation techniques.

Final meetings in each of the four communities provided the Honduras team and community members with a forum to clarify remaining questions. Male and female participants had the opportunity to voice their opinions and discuss the materials presented. The discussions served as an immediate means to return to the communities for their use and critique some of the information the research team had gathered, analyzed, and interpreted. It also served as a means for the researchers to verify their preliminary findings.

About ECOGEN and DESFIL

ECOGEN is a sub-project of the Social and Institutional Aspects of Regional Resource Systems Project (SARSA II) funded by USAID. It was established at Clark University with Virginia Polytechnic Institute and State University to research how attention to gender may increase the equity and effectiveness of natural resource management programs. DESFIL promotes the participation of local resources users, both men and women, in the sustainable management of fragile lands. Both projects are supported by the USAID Office of Women in Development.

Summary of Lessons Learned

1. A conceptual framework and working questions guide the research.
2. The choice of research partners depends on the goals and priorities of the researchers, of those funding the research, and of those working with the communities.
3. The rationale for the choice of the research site should reflect the research goals.
4. A multidisciplinary team, with team members both native to the area and from outside the area, allows for cross-disciplinary and cross-cultural insights.
5. Continual team building among the researchers is a priority.
6. Keeping gender at the center of the research agenda requires constant vigilance.
7. A participatory research process requires tools that invite community participation.
8. Participatory research generates qualitative data that need to begin to be analyzed in the field.
9. A blend of qualitative and quantitative analysis confirms and validates the research findings.
10. Participatory research can inform more traditional research components of the project.
11. Participatory research includes returning the research to the participating communities for their critique, verification, and use.

[1] Urban, Anne-Marie and Mary Hill Rojas. "Shifting Boundaries: Gender, Migration and Community Resources in the Foothills of Choluteca, Honduras." Worcester, Massachusetts: ECOGEN, Clark University, 1994.

[2] For complete framework see Thomas-Slayter, Barbara, Diane Rochleau, et al. "Introducing the ECOGEN Approach to Gender, Natural Resources Management, and Sustainable Development." Clark University: Worcester, Massachusetts, 1992.

[3] Thus minimizing "rural development tourism"- See Chambers, Robert. "Shortcut and Participatory Methods for Gaining Social Information for Projects." In Cernea, Michael (ed.) *Putting People First: Sociological Variables in Rural Development*, Second Edition, World Bank: Washington, D.C. 1991.

[4] See Thomas-Slayter, Barbara, et al. "Tools of Gender Analysis: A Guide to Field Methods for Bringing Gender into Sustainable Resource Management." Clark University: Worcester, Massachusetts, 1993.

[5] See also the National Environment Secretariat, World Resources Institute, Egerton University, Clark University. "Participatory Rural Appraisal Handbook: Conducting PRAs in Kenya." Washington, D.C.: World Resources Institute, 1990.

[6] See Rochleau, Diane. "The User Perspective and the Agroforestry Research and Action Agenda." In Gholz H.L. (ed.) *Agroforestry: Realities, Possibilities, and Potentials*. Dordrecht: Martinus Nijhoff, 1987.

[7] See, for example, Feldstein, Hilary Sims and Jiggins, J. (ed.), *Tools for the Field: Methodologies Handbook for Gender Analysis in Agriculture*. West Hartford, Connecticut: Kumarian Press. 1989; Cernea, Michael M. (ed.), *Putting People First: Sociological Variables in Rural Development*; Second Edition. Washington, D.C.: World Bank, 1991; and Vonway, Gordon R., "Rapid Appraisal Techniques for Sustainable Development." International Institute for Environment and Development: London, 1988.

[8] Class, gender and ethnicity often interact. For example, gender roles and responsibilities and use of natural resources may vary along lines of class and ethnicity. A wealth ranking exercise can ensure that the interviews and group discussions include men and women from all socioeconomic groups as defined by the community. See, for example, Thomas-Slayter, Barbara, et al., "Tools of Gender Analysis: A Guide to Field Methods for Bringing Gender into Sustainable Resource Management." Clark University: Worcester, Massachusetts, 1993.

[9] Thrupp, Lori Ann. "Political Ecology of Sustainable Rural Development: Dynamics of Social and Natural Resource Degradation." *Food for the Future: Conditions and Contradictions of Sustainability*. Allen, Patricia, ed. New York: John Wiley & Sons, Inc., 1993.

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